

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

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NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN ASIA (DIPTERA), XXXI¹

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FOUR PLATES

The very interesting crane flies discussed herewith were taken by Rev. Mr. George M. Franck on Mount Omei, Szechwan, western China, chiefly at high altitudes. I am greatly indebted to Mr. Franck for this continued interest in saving the small and medium-sized species of Tipulidæ, flies that are usually overlooked by the general collector. The types of the novelties are preserved in my collection of these flies. The present report adds the following generic and subgeneric groups to the already large list known from China: *Stibadocerella*, *Discobola*, *Franckomyia*, and *Ptilostenodes*.

TIPULINÆ

TIPULA (TRICHOTIPULA) LONGIFIMBRIATA sp. nov. Plate 1, fig. 1; Plate 2, fig. 25.

General coloration of mesonotal præscutum almost uniformly dark brown; wings obscure yellow, many of the veins seamed with brown; numerous macrotrichia in cells beyond cord and in outer ends of some of the more basal cells; cell M_1 sessile or nearly so; male hypopygium with caudal margin of tergite bearing a divaricate blackened fork; inner dististyle produced behind into a short taillike extension.

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

Frontal prolongation of head relatively short, brownish black, brighter dorsally at base; nasus distinct; palpi black. Antennæ (male) relatively long, if bent backward extending nearly, if not quite, to base of abdomen; scape and pedicel yellow; flagellum black; basal enlargements of segments scarcely indicated, the segments being nearly cylindrical; longest verticils subequal to segments; terminal segment about one-third the length of the penultimate. Front and anterior vertex obscure yellow; posterior sclerites of head brownish gray.

¹ Contribution from the entomological laboratory, Massachusetts State College.

Pronotal scutum dark brown, the scutellum yellow. Mesonotal præscutum almost uniformly dark brown, without evident stripes in the unique type; scutal lobes blackened, the median area yellowish testaceous; scutellum testaceous, clearer yellow medially; mediotergite brownish yellow. Pleura yellow, variegated with darker on the mesepisternum. Halteres obscure yellow. Legs with the coxæ yellow, the fore coxæ a trifle darkened; trochanters yellow; femora light brown, the tips passing into dark brown; tibiæ dark brown, the tips narrowly blackened; tarsi black; claws (male) with a single erect spine at near mid-length. Wings (Plate 1, fig. 1) with the ground color yellow, variegated by brown seams to many of the veins, including the cord, outer end of cell 1st M_2 , vein Cu except near outer end, and vein 2d A; outer longitudinal veins more narrowly seamed with brown; extensive paler clouds occupying most of cell 1st A; stigma dark brown; veins brown; macrotrichia black. Abundant macrotrichia in all cells of wing beyond cord, and in outer ends of cells C, R, M, Cu, and 1st A basad of cord (indicated in figure by stippled dots); base of cell 1st M_2 nearly destitute of trichia. Venation: Cell M_1 narrowly sessile or very short-petiolate; m-cu close to fork of M_{3+4} ; cell 2d A of moderate width.

Abdominal tergites dark brown, narrowly ringed caudally with testaceous-yellow; sternites more brownish yellow; hypopygium brown. Male hypopygium (Plate 2, fig. 25) with the tergite, 9t, almost completely separated from the sternite by extensive pale membrane; basistyle, b, elongate, separated from the ninth sternite, 9s, by an unusually long, straight, ventral suture. Ninth sternite, 9s, viewed from beneath widely filled with pale membrane, the narrow strip delimited beneath the suture with a fringe of unusually long setæ, directed ventrad; a compact oval patch at cephalic portion of row bears more delicate silken setæ. Ninth tergite, 9t, with the caudal margin transverse, the median area produced caudad into two, blackened, divergent horns, their tips directed very slightly ventrad. Outer dististyle, od, short and broad, the apex truncate, the surface with numerous short setæ. Inner dististyle, id, complex, the beak portion blackened, shallowly bifid, beneath this with a second, blackened, fingerlike lobe; apex of style superimposed beneath the blackened beak as a slender pale lobe; caudal portion of style produced backward as a short taillike point. Eighth sternite, 8s, relatively small, with caudal border gently convex, the entire surface with sparse, scattered, black setæ.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, summit, altitude 11,000 feet, at light, July 30, 1935 (*Franck*).

The general appearance and the wing pattern of the present fly are much as in *Tipula* (*Trichotipula*) *polytricha* Alexander, differing in the glabrous basal cells of the wing, nearly sessile cell M_1 , and, especially, the details of structure of the male hypopygium, including the ninth tergite, ninth sternite, and styli.

TIPULA (TRICHOTIPULA) MALLOPHORA sp. nov. Plate 1, fig. 2; Plate 2, fig. 26.

Allied to *longifimbriata*; entire mesonotum dark brown; thoracic pleura dark brown, variegated by paler on the dorsal sternopleurite and pteropleurite; wings with pattern less contrasted, obscure yellow and dark brown; petiole of cell M_1 exceeding m ; abdominal tergites and hypopygium brownish black; inner dististyle with a long pale blade, extending backward from the caudal portion.

Male.—Length, 10 to 11 millimeters; wing, 11 to 12.

Female.—Length, about 12 millimeters; wing, 10.5.

Frontal prolongation of head and palpi dark brown. Antennæ with scape and pedicel obscure yellow; flagellum brownish black; flagellar segments with basal enlargements feebly developed; longest verticils shorter than the segments; terminal segment only about one-fourth the length of the subterminal. Head dark brown, very narrowly darker on orbits.

Mesonotum uniformly dark brown, without indications of markings. Pleura dark brown, paler on the dorsal sternopleurite, pteropleurite, and meron. Halteres elongate, the stem dusky except at the narrow yellow base, the apex of knob yellow. Legs with the coxæ brownish testaceous; trochanters brownish yellow; femora brown, the tips passing into darker brown; remainder of legs dark brown, the tarsi passing into black; claws with a strong erect spine before midlength. Wings (Plate 1, fig. 2) with the very restricted ground color obscure yellow, almost obliterated by very extensive brown clouds and seams, appearing chiefly as pale central streaks in the outer radial and medial fields; a spot near outer end of cell M , a seam along vein 1st A, and a spot near outer end of cell 1st A, not far from vein 2d A; cells before cord chiefly of a uniform brown; stigma oval, darker brown; veins dark brown. Abundant macrotrichia in cells of outer two-thirds of wing (shown in figure by stippled dots), lacking in cells near wing base and in all but extreme outer end of cell Sc. Venation: Petiole of cell M_1 longer than m .

Abdominal tergites and hypopygium brownish black, the sternites more reddish brown; basal sternites more darkened medially, the outer segments more uniformly darkened. Male hypopygium (Plate 2, fig. 26) generally as in *longifimbriata* sp. nov., differing especially in the conformation of the ninth tergite and inner dististyle. Arrangement of setæ on ventral margin of ninth sternite very similar in both species, but differing in size and number of the hairs. Ninth tergite, 9t, with a median blackened plate that splits at apex into two, feebly divergent, acute spines. Inner dististyle, *id*, very complex in structure, produced behind into a long, pale, compressed blade that is slightly constricted near base; two apical, blackened beaks, both slender, acute, and separated from one another only by a narrow slit; the long, pale, cephalic portion of the style bears on outer or dorsal margin a pale lobe whose edge is ragged or fimbriolate.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, summit, altitude 11,000 feet, at light, July 30, 1935 (*Franck*). Allotype, female, White Cloud Temple, altitude 9,000 feet, July 29, 1935 (*Franck*). Paratype, male, with the allotype.

The nearest ally is undoubtedly *Tipula (Trichotipula) longifimbriata* sp. nov. The present fly is most readily told by the petiolate cell M_1 and by the details of structure of the male hypopygium, notably the long, pale, caudal blade of the inner dististyle.

TIPULA (SCHUMMELIA) MEMBRANIFERA sp. nov. Plate 1. fig. 3; Plate 2. fig. 27.

Belongs to the *continuata* group; antennal flagellum black; thoracic pleura yellow, the mesepisternum infuscated; femora obscure yellow, the tips rather narrowly blackened; wings infumed, restrictedly variegated by darker brown and yellow areas; cell 1st M_2 small; male hypopygium with the ninth sternite produced ventrad into long, pale, membranous points on either side of midline.

Male.—Length, about 11 millimeters; wing, 12.5; antenna, 4.

Frontal prolongation of head yellow; nasus distinct; palpi brownish black. Antennæ with scape and pedicel brownish yellow; basal flagellar segment brown, the distal third, together with remainder of organ, black; basal enlargements of segments moderately developed; longest verticils unilaterally arranged, a trifle shorter than the segments. Head with front and anterior vertex yellow; posterior vertex brown.

Pronotum brown. Mesonotal præscutum chiefly covered by three brown stripes, the median one further split by a darker brown capillary vitta; posterior interspaces infuscated, the humeral and lateral portions of præscutum broadly yellow; scutal lobes dark brown, the median area paler; scutellum obscure yellow, vaguely darkened medially; postnotum chiefly yellow. Pleura yellow, the dorsopleural region and mesepisternum infuscated. Halteres yellow, the base of knobs infuscated, the apex pale yellow. Legs with the coxæ yellow; trochanters obscure yellow; femora obscure yellow, the tips rather narrowly blackened, a little more broadly so on the fore and middle legs where about the distal sixth is included; tibiæ and tarsi black; claws with long basal spine at near proximal third. Wings (Plate 1, fig. 3) with a strong brownish tinge, restrictedly variegated by darker brown and pale yellow areas; cells C and Sc about of the ground color; stigma oval, dark brown; broad brown seams on m-cu and distal section of Cu₁; yellow areas before and beyond stigma and across base of cell 1st M₂, the last extending into proximal portion of cell M₃; a major yellowish area near outer end of cell M; bases of cells Cu, 1st A, and 2d A a trifle brightened; veins brown, the obliterative areas at fork of M pale. Venation: Rs a little longer than m-cu; cell 1st M₂ small, pentagonal; cell M₁ short-petiolate, the stem a little longer than m; m-cu close to fork of M₃₊₄.

Abdomen with basal four tergites obscure yellow, darker dorsally; outer segments black, the hypopygial appendages pale. Male hypopygium (Plate 2, fig. 27) with the suture between tergite, 9t, and sternite, 9s, nearly complete; basistyle not evidently separated from sternite. Ninth sternite, 9s, on either side produced ventrad into a long, pale, membranous lobe, gradually narrowed to a subacute point, shortly before the free tips united across the midline. Ninth tergite, 9t, broadly notched medially, as in the group; lateral lobes broadly rounded, their margins narrowly blackened; base of notch with a very low obtuse lobule. Outer dististyle, *od*, gently arcuated, of moderate length. Inner dististyle, *id*, with the outer margin conspicuously blackened, the outer apical portion extended into a blunt point; two blackened denticles, the more basal one smaller. Eighth sternite, 8s, narrow, without lobes or modifications; setæ small and sparse.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*).

The present fly is readily told from other allied species of *Schummelia* by the wing pattern and venation, and the somewhat remarkable development of pale membrane of the ninth sternite of the male hypopygium. The closest ally is the next-described species, *Tipula* (*Schummelia*) *dissociata* sp. nov.

TIPULA (SCHUMMELIA) DISSOCIATA sp. nov. Plate 1, fig. 4; Plate 2, fig. 28.

Generally similar and closely allied to *T. (S.) membranifera* sp. nov., differing especially in the details of body and wing coloration, venation, and structure of the male hypopygium.

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

Frontal prolongation of head without clearly defined nasus. First flagellar segment shorter, but succeeding segments longer, than in *membranifera*. Posterior portion of head conspicuously dark brown. Median præscutal stripe not divided by a capillary darker brown vitta. Dark pleural girdle on mesepisternum dark brown, distinct. Apices of knobs of halteres only slightly brightened. Wings (Plate 1, fig. 4) with ground color slightly darker brown; cell Sc dark brown, contrasting conspicuously with the yellow cell C. Venation: Cell 1st M_2 more elongate; m-cu at near midlength of M_{3+4} . Male hypopygium (Plate 2, fig. 28) without a median lobule on caudal margin of ninth tergite. Outer dististyle, *od*, longer and more attenuated. Inner dististyle, *id*, with the blackened lobes of distinct conformation, as shown.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*). Allotopotype, female, Chu Lao Tong Temple, altitude 6,000 to 7,000 feet, July 27, 1935 (*Franck*).

TIPULA (SCHUMMELIA) DISSOCIATA TIMENDA subsp. nov.

Female.—Length, about 13 millimeters; wing, 14.

As in the typical form, differing as follows: Nasus evident, slender. Pronotum clear light yellow throughout. Posterior interspaces of præscutum yellow; median region of scutum yellow; scutellum and mediotergite uniformly yellow, without markings. Pleura yellow, not or only insensibly variegated by darker on anepisternum. Apices of knobs of halteres clear yellow. Legs with femoral tips broadly blackened. Wings with cell M_1 narrowly sessile. Abdominal tergites chiefly brownish black, the first segment and sides of the second yellow; succeed-

ing tergites vaguely brightened by obscure yellow areas; sub-terminal segments uniformly blackened.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, Chu Lao Tong Temple, altitude 6,000 to 7,000 feet, at light, July 27, 1935 (*Franck*).

TIPULA (ACUTIPULA) FORTICAUDA sp. nov. Plate 1, fig. 5; Plate 2, fig. 29.

Mesonotum gray, the pleura, including ventral half of pleurotergite, yellow, unmarked; wings with cell C, prearcular region, and stigma light brown, cell Sc uniformly darker brown; a dark cloud at near midlength of cell Cu; abdomen dorsally uniform dark gray, the lateral borders narrowly buffy, margined internally by dark brown; male hypopygium large; ninth tergite simple; inner dististyle with the outer lobe produced into a pendant trunklike portion; caudal margin of eighth sternite weakly bilobed, with conspicuous setæ.

Male.—Length, about 15 to 16 millimeters; wing, 17 to 18.

Frontal prolongation of head dark brown; nasus long and distinct; palpi black. Antennæ with scape and pedicel obscure yellow; first flagellar segment brownish yellow, the remaining segments brownish black; verticils exceeding the segments in length. Head dark brownish gray, the orbits restrictedly paler gray.

Pronotum obscure yellow. Mesonotal præscutum ashy gray with three, scarcely differentiated, brownish gray stripes, the interspaces obscure; extreme cephalic border of præscutum infuscated; posterior sclerites of mesonotum, including the dorsal half of pleurotergite, gray; parascutella yellow. Pleura uniformly light yellow, the dorsopleural membrane a trifle more dusky. Halteres dark brown. Legs with the coxæ and trochanters light yellow; femora obscure yellow, passing into more brownish yellow, the tips narrowly blackened, the amount subequal on all legs; tibiæ brownish black; tarsi passing into black. Wings (Plate 1, fig. 5) with cell C, prearcular region, and stigma light brown; cell Sc much darker brown throughout; general coloration of remainder of wing pale brown, clearer before cord and in basal portions of cells M and Cu; dusky clouds at outer end of cell M and at near midlength of cell Cu; veins dark brown. Venation: Rs a trifle longer than m-cu; petiole of cell M₁ and m subequal.

Abdomen dorsally uniformly dark gray, the lateral borders of the tergites narrowly buffy, margined internally with dark brown; extreme caudal borders of tergites two to four pale;

basal sternites yellow, beyond the second passing into brownish black; hypopygium very large and powerfully constructed, uniformly darkened. Male hypopygium (Plate 2, fig. 29) with the ninth tergite, 9*t*, bearing a moderately broad median lobe that is further narrowed at near two-thirds the length into a simple, blackened, spinulose point. Styli as figured; outer style, *od*, obliquely truncated at apex. Inner dististyle, *id*, with the beak portion heavily blackened, its own crest high; outer lobe of style prolonged into a glabrous trunklike portion, deflected towards the beak of the style, the outer apical angle further produced into a small point; setæ at crest of style powerful, about twenty in number. Eighth sternite, 8*s*, sheathing, the apex concave, each lateral lobe with numerous elongate setæ.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, July 29, 1935 (*Franck*). Paratopotypes, 2 males.

The present fly bears a general resemblance to species such as *Tipula* (*Acutipula*) *quadrinotata* Brunetti, but is readily told from all regional allies by the unusually large hypopygium, with the median lobe of the tergite simple, and the inner dististyle of peculiar conformation.

TIPULA (ACUTIPULA) SUBINTACTA sp. nov. Plate 1, fig. 6; Plate 2, fig. 30.

General coloration of thorax yellow, the præscutum with four entire brown stripes; scutellum yellow, margined with dark brown; legs brown; wings dark, variegated by cream-colored areas before cord and as a continuous line across bases of outer medial cells; male hypopygium with the median lobe of tergite slender; inner dististyle with the outer lobe divided by a rounded notch into two lobes, each bearing groups of spinous setæ.

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

Frontal prolongation of head brown; nasus distinct; palpi brownish black. Antennæ with scape and pedicel light yellow; flagellum brownish black; flagellar segments with basal enlargements relatively small; longest verticils subequal to the segments in length. Head dark brownish gray.

Pronotum dark brown. Mesonotal præscutum obscure yellow, with four entire brown stripes, the intermediate pair relatively narrow and clearly defined, separated by a conspicuous, yellow, median line; lateral stripes less clearly defined, laterally extending towards margin; scutum obscure yellow medially, the lobes extensively darkened; scutellum obscure yellow, conspicuously margined with dark brown; central portion of mediotergite

brown, the lateral and posterior portions yellow pollinose. Pleura yellow, the central portion of pleurotergite darker; dorso-pleural membrane feebly darkened. Halteres infuscated, the apex of knob more whitened. Legs with the coxæ and trochanters yellow; remainder of legs uniformly brown, apparently not fully colored in the slightly teneral type. Wings (Plate 1, fig. 6) slightly teneral, but with the pattern entirely indicated; ground color dark, variegated by restricted cream-colored areas before cord, near base of cell 1st M_2 , and as an oblique stripe across the basal portions of cells M_1 to M_4 , inclusive; a small whitish spot at near two-thirds the length of cell M , adjoining vein Cu ; pale areas on either side of the darkened spot lying before midlength of cell Cu ; veins dark. Wings relatively narrow, the veins near stigma somewhat crowded. Venation: Rs subequal in length to $m-cu$; petiole of cell M_1 longer than m ; $m-cu$ a short distance before fork of M_{3+4} .

Basal abdominal segments chiefly obscure yellow, the outer ones darker, but not fully colored in the unique type. Male hypopygium (Plate 2, fig. 30) with the median lobe of ninth tergite, $9t$, unusually slender at apex, set with black spines; on ventral face of lobe with two carinæ that diverge slightly behind. Outer dististyle, od , broad, the apex produced into a moderately long lobe; setæ at inner margin near base long and conspicuous. Inner dististyle, id , with the beak slender; outer lobe deeply divided by a rounded notch into a broadly obtuse outer lobe, crowned with from twenty-five to thirty spinous setæ, and a narrower, more clavate, basal lobe, its apex produced into a decurved point, the outer surface with abundant spinous setæ. Eighth sternite broad at apex, provided with hair brushes.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*).

The nearest relative of the present fly seems to be *Tipula* (*Acutipula*) *intacta* Alexander, which has the hypopygium generally similar but differing in all details. The hypopygium is very different in structure from that of *T. (A.) omeiensis* Alexander and *T. (A.) yunnanica* Edwards, which have a somewhat similar wing pattern.

TIPULA (VESTIPLEX) AVICULAROIDES sp. nov. Plate 1, fig. 7; Plate 2, fig. 31.

Belongs to the *himalayensis* group; allied to *avicularia*; antennæ (male) elongate, the flagellum black; mesonotal præscutum

with the ground color yellow, with four brown stripes that are insensibly bordered by darker; scutellum and pleura chiefly black, pruinose; wings brownish yellow, very restrictedly variegated by cream-yellow spots; cells beyond cord uniformly of the ground color; basal four abdominal tergites reddish orange, with a narrow darkened dorsal stripe; outer abdominal segments, including hypopygium, black; basistyle with a spine.

Male.—Length, about 14 millimeters; wing, 15; antenna, about 6.5.

Frontal prolongation of head chestnut-brown laterally, darker above; nasus distinct; palpi black, the incisures narrowly pale. Antennæ elongate, as shown by the measurements; scape reddish brown, darkened apically; pedicel pale yellow; flagellum black; flagellar segments elongate, moderately incised, the verticils shorter than the segments; terminal segment tiny. Head light brown, the posterior orbits narrowly yellow, margined internally by a dusky line; posterior vertex with a continuous, black, median vitta.

Pronotum dark brown. Mesonotal præscutum with the ground color, including the interspaces, yellow, the lateral borders behind the pseudosutural foveæ blackish gray; four brown stripes that are insensibly bordered by slightly darker brown, most evident on mesal edges of lateral stripes and as paired submedian lines on intermediate stripes; scutum gray, the lobes conspicuously variegated by dark brown; scutellum black, the surface sparsely pruinose; mediotergite black, heavily pollinose with grayish yellow, with a capillary, median, black vitta. Pleura chiefly blackened, the surface sparsely pruinose; ventral pleurotergite yellow pollinose. Halteres brown, the knobs blackened. Legs with the coxæ dark gray; trochanters obscure yellow; femora obscure yellow basally, passing into brownish yellow, the tips broadly blackened; tibiæ and tarsi black. Wings (Plate 1, fig. 7) with the ground color almost uniformly brownish yellow, cell Sc and the prearcular field clearer yellow; restricted cream-colored spots, distributed as follows: Before stigma in cell R_1 ; across cell 1st M_2 ; in basal half and near outer end of cell M; extreme bases of cells Cu and 1st A; two tiny spots near outer end of cell 1st A; outer end of cell 2d A; no sign of brightening in outer radial or medial fields; veins dark, those in outer radial field somewhat paler brown. Venation: Cell 1st M_2 relatively long; m-cu just before fork of M_{3+4} ; petiole of cell M_1 subequal to m.

Abdomen with basal four tergites reddish orange, with a narrow, black, continuous, dorsomedian vitta, the lateral borders of the basal two segments less evidently darkened; segments five to nine, inclusive, together with the hypopygial appendages, black, the surface sparsely pruinose. Male hypopygium (Plate 2, fig. 31) small, the basistyle, *b*, entirely separated from the sternite, its posterior angle produced dorsad into a powerful, broad-based, blackened spine, the tip acute. Ninth tergite, *9t*, small, divided medially by pale membrane, the lateral lobes obtuse. Outer dististyle, *od*, relatively narrow, dusky, with abundant setæ. Inner dististyle, *id*, simple, the beak darkened, the posterior portion of style opposite the beak produced caudad into a yellow triangular flange. Ninth sternite, *9s*, with a small, blackened, rounded lobe near margin of junction with basistyle, this structure apparently homologous with the bird's-head structure in *avicularia*. *Ædeagus* pale, jutting caudad from genital chamber, the acute tip strongly decurved.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Nwa Nien Pin Temple, altitude 6,500 feet, July 31, 1935 (*Franck*).

The present fly superficially resembles species such as *Tipula* (*Vestiplex*) *avicularia* Edwards, *T. (V.) nigroapicalis* Brunetti, and *T. (V.) pleuracantha* Edwards, differing from all in the wing pattern, with no sign of a poststigmatal brightening, and in the structure of the male hypopygium.

TIPULA (OREOMYZA) PROLONGATA sp. nov. Plate 1, fig. 8; Plate 3, fig. 32.

General coloration yellow, the præscutum with three pale brown stripes; antennæ (male) with basal three segments yellow, the remainder black; legs with tips of femora blackened, of the posterior pair narrowly so; wings tinged with dusky, cells C, Sc, and the stigma abruptly brownish black; prearcular region light yellow; outer abdominal segments blackened; male hypopygium with the tergite produced into two slender lobes, separated by a V-shaped notch; a single complex dististyle, produced caudad into a long, flattened, yellow blade.

Male.—Length, about 12 millimeters; wing, 13.

Female.—Length, about 15 millimeters; wing, 14.

Frontal prolongation of head obscure yellow, slightly darker laterally; nasus reduced to a small rounded papilla; palpi dark brown, the terminal segment extensively yellow on distal portion. Antenna (male) relatively long, if bent backward extending to

about midlength of the second abdominal segment; basal three segments light yellow, the remaining segments black; first flagellar segment unusually long, about one-half longer than the second; succeeding segments with basal enlargements feebly developed; verticils shorter than the segments. Front and anterior vertex yellow; posterior portion of head grayish brown, the posterior orbits a little brighter; an exceedingly delicate, capillary, median, dark line.

Pronotum yellow. Mesonotal præscutum with the dorsum almost uniformly pale yellowish brown, the three stripes scarcely darker and poorly delimited against the ground; lateral margins of præscutum yellow; scutal lobes feebly darkened; scutellum and mediotergite yellow. Pleura uniformly yellow. Halteres obscure yellow, the knobs darkened. Legs with the coxæ and trochanters yellow; femora yellow basally, soon passing into obscure yellow, the tips blackened, more broadly so on the fore and middle legs, narrowly so on the posterior femora; tibiæ and tarsi black; claws (male) with long basal spine. Wings (Plate 1, fig. 8) with a dusky tinge; cells C and Sc, together with the stigma and a confluent seam on anterior cord, brownish black; prearcular cells light yellow; posterior cord and longitudinal veins beyond cord very narrowly seamed with brown; veins brownish black to black, brightened in prearcular field. Venation: R_{1+2} entire; Rs long, nearly twice m-cu; petiole of cell M_1 shorter than m; M_{3+4} shorter than the basal section of M_{1+2} ; cell 2d A narrow.

Abdomen with basal three tergites yellow, unmarked; succeeding two tergites darkened laterally; sixth and remaining segments black, sparsely pruinose; lateral borders of tergites five to eight, inclusive, broadly light gray; basal sternites yellow. Male hypopygium (Plate 3, fig. 32) with the tergite, $9t$, entirely separated from the sternite, $9s$; basistyle incompletely separated from sternite by a ventral suture, its outer end not at all produced; dististyle inserted unusually far ventrad. Ninth tergite, $9t$, a large, quadrate, blackened plate, its caudal margin further extended into a broad, depressed, blackened ledge that is deeply split by a V-shaped notch, the lateral lobes slender, with microscopic black spines on mesal face at apex. A single complex dististyle, d , the usual outer style reduced to a tiny lobe; main body of style produced caudad beyond the other elements of the hypopygium as a flattened yellow blade, the sides parallel,

the apex obtuse. Eighth sternite relatively small, without armature of modified lobes or setæ.

Female with the genital shield and bases of hypovalvæ intensely black; cerci horn-color, straight and slender, the tips gently decurved; hypovalvæ beyond base reddish horn-color, compressed.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, July 29, 1935 (*Franck*). Allotopotype, headless female, summit, altitude 11,000 feet, August 18, 1934 (*Graham*); United States National Museum.

In its general appearance, the present fly is much like *Tipula* (*Vestiplex*) *testata* Alexander, but belongs to a different subgeneric group, and is entirely distinct in the details of wing pattern and structure of the male hypopygium.

CYLINDROTOMINÆ

STIBADOCERELLA OMEIENSIS sp. nov. Plate 1, fig. 9.

General coloration greenish testaceous, the præscutum and scutum variegated with dark brown; antenna (male) about one-half longer than body, the flagellum whitish; fore tibiæ with base and apex broadly white; remaining tibiæ without a pale basal ring; basitarsi entirely dark brown; wings with second and third sections of vein M_{1+2} subequal; cell 2d A ending about opposite the proximal end of the arculus.

Male.—Length, about 9.5 millimeters; wing, 9.3; antenna, about 14.5.

Rostrum pale yellow; palpi black. Antennæ about one-half longer than the body; scape and pedicel pale green; flagellum whitish, the outer segments passing into pale green. Head greenish testaceous, smooth.

Pronotum pale greenish yellow. Mesonotal præscutum pale greenish with three dark brown stripes; scutal lobes similarly darkened; remainder of mesonotum pale testaceous. Pleura uniformly pale, the ventral sclerites, with the coxæ, with a strong greenish tinge, undoubtedly strongly marked and conspicuous in living individuals. Halteres elongate, the stem pale brown, the knob blackened. Legs with the coxæ and trochanters greenish testaceous; femora pale greenish brown, the tips somewhat darker; fore tibiæ with base broadly white, the tip similarly colored and nearly twice as extensive as the base; remaining

tibiæ pale greenish brown, with no indication of white rings, either at base or apex; all basitarsi brown; outer four tarsal segments of all legs white, with a distinct greenish tinge, the pretarsus darkened; basal third to fourth of second tarsal segment of fore and middle legs slightly darkened; posterior legs broken beyond midlength of tibiæ. Wings (Plate 1, fig. 9) crystal clear, with black veins. Venation: Sc_1 ending shortly before r-m, Sc_2 at its tip; basal section of Rs a trifle longer than the distal portion; basal section of M_3 long, arcuated, exceeding twice the length of m; third section of M_{1+2} subequal to second section of the same vein; cell 2d A ending about opposite the proximal end of arculus.

Abdomen pale yellowish brown, the pleural areas somewhat darker.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 5,500 feet, July 27, 1935 (Franck).

The present species is well distinguished from the three previously described in *Stibadocerella* by the whitish antennal flagellum, lack of a basal pale annulus on middle and posterior tibiæ, and the marked restriction of white color on the tarsi.

LIMONIINÆ

LIMONIINI

LIMONIA (LIMONIA) OMNIFLAVA sp. nov. Plate 1, fig. 10; Plate 3, fig. 33.

General coloration pale yellow, the præscutum with a weakly indicated, brown, median stripe, restricted to anterior half; head black; antennæ 15-segmented, the flagellum chiefly yellow; legs yellow, only the terminal tarsal segments blackened; wings uniformly pale yellow; Sc_1 ending about opposite two-thirds the length of Rs, Sc_2 a little longer than Sc_1 ; R_{1+2} elongate; abdominal tergites darkened medially; hypopygium with the dististyle extended into a boomerang-shaped apical point; ædeagus terminating in two divergent points.

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

Rostrum and palpi black. Antennæ 15-segmented, there being thirteen flagellar segments; scape black; pedicel dark brown; flagellum yellow, the outer three or four segments brownish yellow; basal flagellar segments oval, the outer ones elongate; terminal segment only a trifle shorter than the penultimate; verticils of outer segments shorter than the segments themselves. Head black; anterior vertex reduced to a narrow strip.

Cervical region brownish black. Pronotum and mesonotum pale yellow, the præscutum with a weakly indicated, more brownish, median stripe on its anterior half. Pleura pale yellow. Halteres relatively elongate, pale yellow, the knobs weakly darkened. Legs pale yellow, only the outer four tarsal segments blackened; tarsi relatively long and slender; claws with a single slender subbasal tooth. Wings (Plate 1, fig. 10) uniformly pale yellow; stigma not indicated; veins brownish yellow. Venation: Sc long, Sc₁ ending at near two-thirds the length of Rs, Sc₂ at tip of Sc₁; R₁₊₂ long, nearly three times R₂ alone; cell 1st M₂ of moderate length; m-cu close to fork of M.

Abdominal tergites medially uniform dark brown, the sides pale yellow; sternites pale yellow; hypopygium obscure yellow, the dististyles chiefly darkened. Male hypopygium (Plate 3, fig. 33) with the tergite, 9t, gently concave on central portion of caudal border. Basistyle with ventromesal lobe very obtuse, occupying most of mesal face of style. Dististyle, *d*, with base slightly dilated, dusky, the long apical yellow point more or less boomerang-shaped, slightly compressed, with a longitudinal lateral carina. Gonapophyses, *g*, heavily blackened at, and back from, the acute tips. Ædeagus, *a*, broad, terminating in two divergent points, the surface of outer half microscopically scabrous.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*).

By keys to the species of *Limonia* in the western Palæarctic fauna the present fly runs to *Limonia (Limonia) stigma* (Meigen), which has a very different hypopygium. There is no very close ally in the eastern Palæarctic Region.

LIMONIA (LIMONIA) TESSELLATIPENNIS sp. nov. Plate 1, fig. 11; Plate 3, fig. 34.

General coloration yellow, the præscutum with three incomplete brownish black stripes, the short lateral pair bent laterad at anterior ends, reaching the margin; knobs of halteres dark brown; legs elongate; femora obscure yellow, with a narrow black ring before tip and a more diffuse darkened annulus at near two-thirds the length of the segment; wings yellow, with a heavy, tessellated, brown pattern; stigma pale brown, ringed with dark brown; Sc long; Rs angulated on basal third; R₁₊₂ unusually long, exceeding R₂₊₃; inner end of cell 1st M₂ arcuated; m-cu before fork of M; abdomen chiefly yellow, the subterminal segments blackened; male hypopygium with a single dististyle that

is pale, narrowed to the subacute tip; cerci simple, elongate, and very slender.

Male.—Length, about 12 millimeters; wing, 12.

Female.—Length, about 13 to 14 millimeters; wing, 12 to 13.5.

Rostrum and palpi black. Antennæ with scape brownish yellow; pedicel yellow; basal flagellar segments obscure yellow, the outer ones passing into brown; flagellar segments cylindrical, with long conspicuous verticils that much exceed the segments in length, the longest of these being unilaterally arranged, one to each segment; terminal segment elongate, about one-half longer than the penultimate. Head brown, somewhat paler on occiput; anterior vertex and front black, sparsely pruinose, the former (male) reduced to a linear strip.

Pronotum yellow, narrowly dark brown medially. Mesonotal præscutum yellow, with three brownish black stripes, the median one not attaining the cephalic border of the sclerite nor the suture behind; lateral stripes with their anterior ends bent laterad to margin, the posterior ends not reaching suture; scutum with lobes extensively blackened, this color produced laterad along the suture, median area pale; scutellum pale medially at base, the posterior border margined with brown; mediotergite dark brown, the lateral margins pale. Pleura yellow, weakly darkened on ventral sternopleurite and ventral pleurotergite, and, in certain cases, along the cephalic border of the pteropleurite; a more intensely colored but small spot beneath wing root; dorsopleural membrane faintly dusky. Halteres relatively long, yellow, the knobs dark brown. Legs long and slender; coxæ yellow, the outer faces of fore and middle coxæ weakly darkened; trochanters yellow; femora yellow, more obscure brownish yellow on basal two-thirds, the distal third clearer yellow, with a narrow black subterminal ring about its own length before tip; a second, usually wider but more diffuse, femoral annulus immediately preceding the yellow subterminal ring; tibiæ brownish yellow, the tip narrowly darker; tarsi black; claws (male) with three basal teeth, the outer one larger. Wings (Plate 1, fig. 11) yellow, with a tessellated dark brown pattern that appears as linear streaks in centers of anterior cells and a heavier, more extensive, chiefly marginal pattern in the cells of posterior half of wing; cells C and Sc uniformly light yellow, scarcely variegated by darker; prearcular field brownish yellow; stigma elongate, pale brown, ringed with dark brown; cord, outer end of cell 1st M_2 , and tip of vein Sc narrowly seamed with

darker brown; veins brown, yellow in the flavous costal portions. Venation: Sc long, Sc₁ ending shortly before fork of Rs, Sc₂ longer, oblique in position, its distal end about opposite this fork; Rs angularly bent on basal third; R₁₊₂ of unusual length, exceeding vein R₂₊₃ and subequal to or longer than vein Sc₂+R₁; basal section of R₄₊₅ strongly arcuated to angulated and spurred at near midlength; inner end of cell 1st M₂ strongly arcuated, lying about on a level with cell R₃; m-cu before fork of M; cell 2d A relatively narrow.

Abdomen with basal segments yellow, the pleural region and caudal borders very narrowly darkened; subterminal segments black; hypopygium yellow; in the female the basal abdominal segments more brownish yellow. Male hypopygium (Plate 3, fig. 34) with apical margin of tergite, 9t, notched. Dististyle, *d*, pale, curved to the subacute tip. Gonapophyses, *g*, with short apical point. *Æ*deagus, *a*, narrowed to the bilobed apex. Ovipositor with cerci long and very slender, the tips acute.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Chu Lao Tong Temple, altitude 6,000 to 7,000 feet, at light, July 27, 1935 (*Franck*). Allotopotype, female. Paratopotype, female.

The present fly is most generally similar to *Limonia* (*Limonia*) *cranbrookii* Edwards, differing in the body coloration, uniformly darkened knobs of halteres, leg and wing pattern, and details of venation, as the usually long R₁₊₂ and the smaller cell 1st M₂.

LIMONIA (DISCOBOLA) TAIVANELLA Alexander.

Limonia (*Discobola*) *taivanella* ALEXANDER, Philip. Journ. Sci. 43 (1930) 511-512.

Described from the high mountains of Formosa. A small series, including both sexes, was taken at light at White Cloud Temple, Mount Omei, Szechwan, western China, altitude 9,000 feet, July 29, 1935, by *Franck*.

LIMONIA (DICRANOMYIA) STERNOLOBATA sp. nov. Plate 1, fig. 12; Plate 3, fig. 35.

Size large (wing, male, over 9 millimeters); general coloration gray; rostrum, palpi, and antennæ black throughout; femora black, the bases narrowly yellow; wings handsomely tinted with pale yellow, the prearcular cells bright yellow; a sparse darker wing pattern, including a weak suffusion in outer radial field; basal abdominal segments yellow, the outer ones black; male hypopygium with each basistyle produced ventrad and caudad into a long fingerlike lobe.

Male.—Length, about 10 millimeters; wing, 9.2.

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

Rostrum and palpi black. Antennæ black throughout; flagellar segments short-oval, beyond the fourth or fifth flagellar becoming more elongate; basal four or five flagellar segments with very short apical pedicels, the succeeding segments sessile; verticils longer than the segments, except on the outer ones; terminal segment about one-third longer than the penultimate. Head dark gray, clearer gray on front and anterior vertex, more grayish brown behind; anterior vertex (male) relatively wide, about equal to twice the diameter of scape.

Pronotum black. Mesonotum dark gray, the præscutum with a single, conspicuous, subnitidous black, median stripe that does not reach the suture behind. Pleura heavily gray pruinose, the dorsopleural membrane brown. Halteres short, the base of stem yellow, the remainder dusky, the knobs blackened. Legs with the coxæ obscure brownish yellow; trochanters yellow; femora black, only the narrow bases yellow; tibiæ a little paler, brownish black, the bases narrowly, the tips more broadly, blackened; tarsi black; claws only slightly curved, with two basal teeth, the outermost larger. Wings (Plate 1, fig. 12) handsomely tinted with very pale yellow, the prearcular cells clear bright yellow; cell Sc dark brown; stigma short-oval, dark brown, confluent with a very narrow dark seam on cord; vein Cu and outer end of cell 1st M_2 seamed with darker; cells R_2 to M_2 , inclusive, weakly suffused with brown; axilla feebly darkened; veins black, the prearcular field and vein $Sc_2 + R_1$ before stigma light yellow. Venation: Sc short, Sc_1 ending opposite or immediately before origin of Rs, Sc_2 some distance back from tip; free tip of Sc_2 short, a little proximad of the long R_2 , vein R_1 thus reduced to a short element; m-cu at or just before fork of M; vein 2d A long.

Basal six abdominal segments yellow, the succeeding segments, including most of the hypopygium, black; ventral dististyle yellow. Male hypopygium (Plate 3, fig. 35) very large and complicated, chiefly by outgrowths of the basistyle. Basistyle, *b*, produced ventrad and caudad into long, dark, fingerlike lobes; near proximal end a small lobe, fringed at apex with wavy setæ; at near midlength beyond this point the lobe is slightly bent, at point of angulation with a dense tuft of very long delicate setæ. Dorsal dististyle small and slender, entirely superimposed over the ventral style; near base bent at a right angle. Ventral

dististyle, *vd*, relatively small, the rostral prolongation very broad, its outer apical angle produced into a spinous point; rostral spines two, placed close together at base of this point; ventral margin of lower lobe of prolongation with a dense fringe of yellow setæ; from extreme base of style a tuft of very long slender setæ; mesal face of fleshy lobe of style, at base of prolongation, with a dense group of setæ. Gonapophyses, *g*, with the mesal-apical angle produced into a slender, gently curved, black spine. *Ædeagus*, *a*, sinuous, slender, dusky in color.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, summit, altitude 11,000 feet, at light, July 30, 1935 (*Franck*). Allotopotype, female.

This striking species adds still another member to the subgenus *Dicranomyia* having an enlarged and complicated male hypopygium. From other regional allies in eastern Asia, as *Limonia* (*Dicranomyia*) *bifusifera* (Edwards), *L. (D.) grahamiana* Alexander, *L. (D.) megacauda* (Alexander), *L. (D.) platyrostra* (Alexander), and *L. (D.) veternosa* Alexander, the present fly is amply distinguished by the large size and by the structure of the male hypopygium. The male sex of *L. (D.) transfuga* Alexander, of Kashmir, is still unknown, but the fly is entirely different in coloration from the present insect.

HEXATOMINI

ADELPHOMYIA (ADELPHOMYIA) CERINA sp. nov. Plate 1, fig. 13; Plate 3, fig. 36.

General coloration of thorax pale wax yellow; antennæ 16-segmented, black beyond the scape; wings narrow, hyaline, the stigma insensibly darker; macrotrichia of wing cells reduced to a minimum in outer end of cell R_4 ; R_s elongate; abdomen pale brown, darker subterminally; male hypopygium with dististyles subterminal, the apex of basistyle produced into an acute spine.

Male.—Length, about 3.5 millimeters; wing, 4 by 1.2.

Rostrum pale yellow; palpi darker. Antennæ 16-segmented; basal segment pale, the pedicel and flagellum black; pedicel enlarged; basal flagellar segments more or less bulging on lower face, beyond the fourth passing through oval to elongate; verticils exceeding the segments in length. Head pale brownish yellow.

Mesonotum and pleura entirely wax yellow, the surface more or less nitidous. Halteres relatively elongate, pale. Legs with the coxæ and trochanters yellow; remainder of legs broken.

Wings (Plate 1, fig. 13) narrow, as shown by the measurements; hyaline, the stigma insensibly darker; veins brownish yellow, a little darker colored than the ground; macrotrichia black. Macrotrichia of cells reduced to a minimum of about three in distal end of cell R_4 (indicated in figure by stippled dots). Venation: Sc_1 ending shortly before fork of the long, gently arcuated Rs ; R_{2+3+4} about twice R_2 , the latter subequal to R_{2+3} ; cell M_1 present; m-cu at near midlength of cell 1st M_2 ; vein 2d A long, ending nearly opposite the origin of Rs .

Abdomen pale brown, darker subterminally; hypopygium obscure yellow. Male hypopygium (Plate 3, fig. 36) with the dististyles subterminal in position, the basistyle, *b*, produced caudad beyond the point of their insertion into an acute pale spine; setæ of basistyle very large and coarse on outer half or less. Outer dististyle, *od*, slender, terminating in two acute spines, the apical one a little longer and more curved; before apex on lower edge with four or five microscopic denticles. Inner dististyle, *id*, dilated at base, the surface with abundant setulæ and a few coarse setæ, the narrowly obtuse apex more glabrous. Basal gonapophyses, *g*, appearing as very slender, straight spines.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Chu Lao Tong Temple, altitude 6,000 to 7,000 feet, at light, July 27, 1935 (*Franck*).

The present species is readily told from allied regional forms by the narrow hyaline wings, with the macrotrichia of the cells unusually reduced in number. The nearest described ally is *Adelphomyia* (*Adelphomyia*) *nipponensis* Alexander, which differs in the coloration of the body and wings, abundant macrotrichia of the outer cells of wing, and details of structure of the male hypopygium.

PHYLLOLABIS LAUDATA sp. nov. Plate 1, fig. 14; Plate 3, fig. 37.

General coloration of mesonotum testaceous-brown, the mediotergite and pleura dark brown; head brown, the anterior portions and orbits gray; legs obscure yellow; wings strongly suffused with brown, the stigma a little darker; R_{2+3+4} of moderate length, only a little more than one-third the length of Rs ; M_{3+4} subequal to basal section of M_3 ; m-cu close to fork of M_{3+4} ; male hypopygium with apical fleshy lobe of basistyle short.

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

Rostrum brown; palpi black. Antennæ with scape and pedicel black, the flagellum paler, dark brown; flagellar segments cylindrical, the verticils shorter than the segments; terminal

segment a little shorter than the penultimate. Head with the front, anterior vertex, and posterior orbits gray, the posterior portion of head more infuscated; anterior vertex a little wider than the diameter of scape.

Pronotum dark brown. Mesonotal præscutum, scutum, and scutellum almost uniformly testaceous-brown, without distinct markings; mediotergite darker. Pleura uniformly dark brown, including the dorsopleural membrane. Halteres with the stem obscure yellow, the knobs infuscated. Legs with the coxæ brownish yellow, the fore pair a little darker; trochanters obscure yellow; remainder of legs obscure yellow, the outer tarsal segments a little darkened. Wings (Plate 1, fig. 14) strongly suffused with brown, almost uniformly distributed and without a distinct pattern other than the slightly darker, diffuse stigma; cell R, adjoining the outer end of vein M and the basal portions of cells 1st A and Cu slightly paler; veins brownish black, distinct against the ground. Macrotrichia of veins abundant, long and conspicuous. Venation: R_{2+3+4} of moderate length and arcuation, shorter than cell 1st M_2 and only a little more than one-third the length of Rs; M_{3+4} subequal to the basal section of M_3 ; m-cu close to the fork of M_{3+4} .

Abdomen, including hypopygium, brownish black. Male hypopygium (Plate 3, fig. 37) massive and barrel-shaped, as in the genus; appendage of ninth sternite reduced to a narrow pale strip. Styli as shown, the darkened apical fleshy lobe of basistyle, *b*, less than one-half the length of the body of the style and shorter than the fleshy mesal lobe of latter. Outer blades of basistyle, *b*, simple at tips. Dististyle, *d*, with microscopic punctures at apex.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, summit, altitude 11,000 feet, at light, July 30, 1935 (*Franck*).

Phyllolabis laudata is very distinct from the other Himalayan and western Chinese species of the genus, as *P. beelsoni* Alexander, *P. confluenta* Alexander, *P. pictivena* Alexander, and *P. regelationis* Edwards. The uniformly colored wings, with unusually elongate Rs, and the structure of the male hypopygium readily separate the species from the above allied forms. I would consider *P. pictivena* to be its closest described relative, the species being readily told by the black coloration of the body, the conspicuously patterned wings, and the structure of the male hypopygium.

PHYLLOLABIS PICTIVENA Alexander. Plate 3, fig. 38.

Phyllobasis pictivena ALEXANDER, Philip. Journ. Sci. 49 (1932) 394.

The unique type, a female, was from the summit of Mount Omei, taken July 18, 1931, by Mr. Franck. The same collector secured a number, including both sexes, at the same place and altitude, July 30, 1935.

Allotype, male.—Length, about 8 millimeters; wing, 9.

Characters essentially as in the female, including the color of the legs, wings, and thorax. Male hypopygium (Plate 3, fig. 38) generally as in *laudata* sp. nov., and certain allied forms in the Nearctic fauna. Apical fleshy lobe, *b*, of basistyle very long, exceeding in length the body of style, about twice as long as the fleshy mesal lobe of the latter, and nearly equal in length to the bladelike extensions of the basistyle, *b*. The latter are apparently two in number, or at least deeply divided at apex so as to appear as two blades, in slide mounts superimposed; outer blade terminating in two, slender, chitinized points. Dististyle, *d*, not exceeding in length the shortest blade of the basistyle. Appendage of ninth sternite reduced to a linear pale strip.

PHYLLOLABIS VULPECULA sp. nov. Plate 1, fig. 15.

General coloration of mesonotum brown; legs black; wings with a strong fulvous-yellow tinge, the costal region and outer radial field deeply saturated with the same color; veins pale, poorly delimited against the ground; Rs a little longer than R_{2+3+4} ; cell 1st M_2 elongate; m-cu just before fork of M_{3+4} ; abdomen obscure brownish yellow, darker subterminally.

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

Rostrum and palpi black. Antennæ pale brown throughout; flagellar segments oval, the terminal segments smaller. Head brownish gray.

Pronotum infuscated. Mesonotal præscutum and scutal lobes infuscated, the scutellum and mediotergite a trifle brighter. Pleura obscure yellow. Halteres weakly infuscated, the base of stem restrictedly pale. Legs with the coxæ and trochanters yellow; remainder of legs brownish black to black. Wings (Plate 1, fig. 15) with a strong fulvous-yellow tinge, the costal region and, especially, the outer radial field deeply saturated with the same color; stigma not different in color from the radial field; pale streaks in cell R adjoining the outer portion of vein M and in cell 1st A along the basal portion of the vein; veins pale, poorly defined against the ground. Venation: Sc_1

ending beyond midlength of R_{2+3+4} , Sc_2 pale, a short distance from the tip of Sc_1 ; Rs a little longer than R_{2+3+4} ; cell 1st M_2 elongate, the second section of vein M_{1+2} exceeding two-thirds of the distal section; basal section of vein M_3 elongate, a little shorter than M_{3+4} ; m-cu just before fork of M_{3+4} .

Abdomen obscure brownish yellow, darkened subterminally. Ovipositor with the cerci relatively strong, reddish horn-color, the margins smooth.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*).

Phyllobasis vulpecula is very different from the other species of the genus so far discovered in eastern Asia. The saturated fulvous wings, with unusually elongate cell 1st M_2 , will suffice to separate the fly from all these allied forms (indicated under the account of *P. laudata* sp. nov.).

ERIOPTERINI

Genus **FRANCKOMYIA** novum

Antennæ (Plate 4, fig. 39, *at*) 12-segmented; pedicel not markedly enlarged; flagellum with a very long, basal, fusion segment, involving five segments, the fused element being equal in length to the succeeding five free segments; flagellar segments beyond the fusion cylindrical, the verticils subequal in length to the segments. Tibiæ spurless; claws simple. Wings (Plate 1, fig. 16) with Sc long, Sc_1 ending shortly before the fork of R_{2+3+4} , Sc_2 not far from its tip; R_3 suberect at base, weakly angulated at the narrowest point of cell R_1 ; no distinct R_2 , its former position evidently indicated by the approximation of veins R_1 and R_{2+3} ; a supernumerary crossvein in cell R_3 at near two-thirds the length, the cell somewhat constricted at point of insertion of the crossvein; cell M_1 present, subequal to its petiole; m-cu shortly beyond fork of M ; vein 2d A of moderate length, ending shortly before level of origin of Rs . Male hypopygium (Plate 4, fig. 39) with the basistyle, *b*, of unusual length and slenderness, the distal end produced caudad beyond the point of insertion of the dististyle as a subquadrate pale flap that is provided with abundant setæ; near base of style on mesal face with a slender fingerlike lobe. Dististyle, *d*, bearing a gently curved blackened spine on outer margin before midlength; remainder of style narrowed to the pendant apex. Gonapophyses, *g*, blackened, narrowed at apex into a strong straight spine, the outer surface microscopically scabrous. *Ædeagus*, *a*, small.

Genotype.—*Franckomyia discalis* sp. nov. (Palæartic Region: Western China).

I take great pleasure in naming this very interesting new group of crane flies in honor of Rev. Mr. George Meredith Franck, to whose serious efforts in collecting these flies we owe much of our present knowledge of the Tipulidæ of western China. This curious fly belongs to the subtribe Claduraria and is evidently most closely related to *Pterochionea* Alexander and *Crypteria* Bergroth. The greatest points of similarity to *Pterochionea* are found in the very elongate fusion segment of the flagellum and the single dististyle of the male hypopygium; to *Crypteria*, a relationship is indicated by the upward swing of vein R_{2+3} near its base, narrowing cell R_1 at this point. Compared with *Pterochionea*, the condition of the fusion segment in the present fly is evidently more specialized, as there are no traces of incomplete sutures, indicating the former limits of the components of the fusion; the details of the hypopygium are very distinct in the two groups. Compared with *Crypteria*, the condition of the fusion segment is undoubtedly more generalized, being fully as elongate as the succeeding five segments of the flagellum; the hypopygium of *Crypteria* is very different, with two dististyles. The complete loss of vein R_2 in the present insect is presaged in certain specimens of *Crypteria* and allied groups, where the element tends to become evanescent. From both of the above-mentioned genera, as well as all other generic groups in the Claduraria, the present fly differs conspicuously in the strong supernumerary crossvein in cell R_3 of the wings.

FRANCKOMYIA DISCALIS sp. nov. Plate 1, fig. 16; Plate 4, fig. 39.

Mesothorax reddish yellow, unmarked; head dark gray; legs yellow, the femoral tips, tibial bases and tips, and outer tarsal segments darkened; wings nearly hyaline, with certain of the discal veins, including the cord and outer end of cell 1st M_2 , darkened.

Male.—Length, about 4.8 to 5 millimeters; wing, 5.5 to 6.

Rostrum and palpi black. Antennæ black throughout, the structure (Plate 4, fig. 39, *at*) as described under the generic diagnosis. Head dark gray.

Pronotum infuscated. Mesothorax uniformly reddish yellow, without markings. Halteres uniformly pale. Legs with the coxæ and trochanters yellow; femora yellow, the tips narrowly and gradually infuscated; tibiæ white, the bases and tips very narrowly and insensibly darkened, the amounts subequal; tarsi

with outer segments darkened; legs moderately hairy. Wings (Plate 1, fig. 16) nearly hyaline, with a restricted brown discal pattern, appearing chiefly as a darkening of the veins, as follows: Cord; outer end of cell 1st M_2 ; supernumerary crossvein in cell R_3 ; fork of M_{1+2} ; outer section of vein M_3 ; veins pale, except as indicated above. Venation as discussed under the genus.

Abdominal tergites brownish black, the basal sternites paler, the outer sternites dark, sparsely pruinose; styli brown. Male hypopygium (Plate 4, fig. 39) as discussed under the genus.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, summit, altitude 11,000 feet, at light, July 30, 1935 (*Franck*). Paratopotype, male.

Franckomyia discalis is very different in its general appearance from all other described members of the subtribe *Claduraria* in eastern Asia. Superficially, the fly resembles more closely a species of the genus *Dicranota* (*Amalopina*), as *dicranotoides* (Alexander), than it does any other crane fly.

TRENTEPOHLIA (MONGOMA) ENERVATA sp. nov. Plate 1, fig. 17.

General coloration of body dark brown, the median area of scutum and the scutellum testaceous-yellow; legs dark brown, the tips of all tibiæ narrowly whitened; all tarsi white; wings with a strong dusky tinge; R_s shorter than the gently sinuous R_{2+3+4} ; cell 1st M_2 relatively short and broad; m-cu just before fork of M ; abdomen dark brown.

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

Rostrum black, palpi paling to yellow. Antennæ black throughout; flagellar segments cylindrical, the longest verticils subequal to or a trifle shorter than the segments; terminal segment elongate. Head brownish black.

Pronotum brownish black. Mesonotum dark brown, the median area of scutum and the scutellum paling to testaceous-yellow. Pleura dark brown, the posterior sclerites, surrounding the root of halteres, a trifle paler. Halteres dusky, the extreme base of stem pale. Legs with the coxæ darkened, especially the fore pair which are almost black; trochanters obscure yellow; femora dark brown; tibiæ brown, a trifle paler outwardly, the tips narrowly but conspicuously white, including the setæ; amount of white on tibiæ subequal on all legs, involving approximately the distal tenth of the segment; tarsi white, the terminal segment scarcely darker; fore and middle femora with from six to eight small blackened spines at base; posterior tibiæ with

a long black terminal seta. Wings (Plate 1, fig. 17) with a strong dusky tinge, the prearcular and costal areas somewhat clearer; stigmal region small, infuscated; veins dark brown. The outer medial branches and distal half of R_4 pale and semi-evanescent; axillary margin of wing with three, long, powerful setæ. Venation: Sc_1 ending opposite the proximal end of vein R_2 ; R_s shorter than the gently sinuous R_{2+3+4} ; veins R_3 and R_4 diverging; cell 1st M_2 relatively small, its greatest width exceeding one-half the length; inner end of cell 2d M_2 lying shortly more distad than the subequal cells R_5 and M_3 ; m-cu shortly before fork of M ; distal fusion of Cu_1 and 1st A slight.

Abdomen dark brown, the cerci and hypovalvæ horn yellow.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, Shin Kai Si Temple, altitude about 4,000 feet, at light, August 4, 1935 (*Franck*).

Trentepohlia (Mongoma) enervata is very different from the other regional species of the subgenus in the conspicuously whitened tips of all the tibiæ, in conjunction with the uniformly darkened femora and the white tarsi. The nearest regional ally is *T. (M.) montina* Alexander (Formosa), which differs especially in the coloration of the legs and in the details of venation. Another species *T. (M.) choprai* Alexander (western Himalayas), is likewise allied but with quite distinct venation.

GONOMYIA (PTILOSTENODES) AMICULA sp. nov. Plate 1, fig. 18; Plate 4, fig. 40.

General coloration black, only the scutellum obscure yellow; wings with a very faint brownish tinge; male hypopygium with the outer dististyle a flattened curved blade, at apex produced into two points.

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

Rostrum and palpi black. Antennæ black throughout; flagellar segments passing from oval to cylindrical; terminal segment longer than the penultimate; verticils a little exceeding the segments. Head dull black, sparsely pruinose.

Pronotum and mesonotum dull black, the scutellum obscure yellow. Pleura black, the surface of the posterior sclerites weakly pruinose. Halteres and legs black. Wings (Plate 1, fig. 18) with a very faint brownish tinge; veins black, very conspicuous. Venation: Sc_1 ending opposite origin of R_s , Sc_2 far from its tip, just beyond midlength of the vein; cell 2d M_2 small, about one-third its petiole; m-cu more than its own length before the fork of M .

Abdomen, including hypopygium, black. Male hypopygium (Plate 4, fig. 40) with the ventral lobe, *vb*, of basistyle clavate, with scattered setigerous punctures, with larger spinous setæ at apex. Outer dististyle, *od*, a flattened curved blade, produced at apex into two points, the lower one longer and more acute. Inner dististyle, *id*, much longer, at near two-thirds the length bearing a conspicuous, subappressed, flattened, black spine, the style beyond this point glabrous; basad of spine on inner face with abundant suberect setulæ.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Chu Lao Tong Temple, altitude 6,000 to 7,000 feet, at light, July 27, 1935 (*Franck*).

There are now four distinct species of the subgenus *Ptilostenodes* so far made known, these being *javanica* Alexander (Java), *ptilostenella* Alexander (Luzon), *ptilostenoides* Alexander (Formosa), and the present fly. The last species is separated from the previously described forms by the almost uniform black coloration of the body, antennæ, legs, and halteres, the other species having the body conspicuously variegated with yellow. The male sex of only a single species (*ptilostenella*) was previously known. The male of the present fly shows that excellent characters exist in the male hypopygium of members of the subgenus.

GONOMYIA (GONOMYIA) OCTOSPINOSA sp. nov. Plate 1, fig. 19; Plate 4, fig. 41.

Belongs to the *subcinerea* group; rostrum light yellow; antennæ black throughout; mesonotal præscutum, scutal lobes, and mediotergite chiefly grayish brown; legs black; wings tinged with brown, the prearcular and costal regions clear light yellow; Sc long, Sc₁ ending about opposite one-third the length of Rs; m-cu shortly beyond the fork of M; male hypopygium with each inner dististyle bearing three black spines; phallosome subtended by two black spines.

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

Rostrum light yellow; palpi black. Antennæ black throughout; outer flagellar segments becoming very thin and attenuated. Head grayish brown.

Mesonotal præscutum almost covered by a grayish brown shield, composed of entirely confluent præscutal stripes, the humeral region yellow; median region of scutum and posterior portions of scutal lobes yellow, the centers of the lobes grayish brown; scutellum yellow, the parascutella a trifle more obscure;

mediotergite dark brown, each anterolateral angle restrictedly yellow. Pleura somewhat crushed in the unique type but apparently clear light yellow throughout. Halteres with the stem pale yellow, the knobs weakly infuscated. Legs with the coxæ and trochanters yellow; remainder of legs brownish black. Wings (Plate 1, fig. 19) with a brownish tinge, the prearcular and costal regions clear light yellow; stigmal region very vaguely darkened; veins brown, luteous in the yellow areas. Venation: Sc relatively long, Sc₁ ending about opposite one-third the length of Rs, Sc₂ subobsolete, near tip of Sc₁; R₂₊₃₊₄ elongate, only a little shorter than Rs; m-cu about one-third its length beyond the fork of M.

Abdominal tergites dark brown, the sternites yellow. Male hypopygium (Plate 4, fig. 41) with the apical lobe of basistyle, *b*, less than one-third the long fleshy outer dististyle, *od*. Inner dististyle, *id*, with three black spines, the more basal one on outer margin slender and straight, bearing a powerful seta at its base; outer spine long and flattened; a broad-based discal spine about intermediate in length between the two marginal ones. Phallosome, *p*, with two long, slender, blackened spines, arising near base of ædeagus, *a*.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*).

Gonomyia (*Gonomyia*) *octospinosa* is quite distinct from the other regional species of the genus in the unusual development of spines on the male hypopygium, there being a total of eight, with three on each inner dististyle and two subtending the phallosome.

ERIOPTERA (ILISIA) POSTREMA sp. nov. Plate 1, fig. 20.

Belongs to the *areolata* group; size large (wing, female, 5.4 millimeters); general coloration of head and thorax gray; halteres pale yellow; legs brownish black; wings almost uniformly cream-yellow, the stigma elongate, pale brown; veins yellow, poorly delimited against the ground; Sc₂ only a short distance beyond the origin of Rs; cell 2d A narrow; abdomen black.

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

Rostrum and palpi black. Antennæ dark brown throughout; flagellar segments truncated oval, the verticils exceeding the segments; terminal segment a little more than one-half the penultimate. Head blackish, pruinose.

Anterior lateral pretergites very obscure yellow. Mesonotum gray, the præscutum with extremely vague indications of darker stripes; pseudosutural foveæ and tuberculate pits dark brown. Pleura dark gray throughout. Halteres pale yellow. Legs with the coxæ dark brown; trochanters yellowish brown; remainder of legs brownish black. Wings (Plate 1, fig. 20) almost uniformly cream-yellow, the prearcular and costal areas clearer light yellow; stigma elongate, pale brown; veins yellow, poorly delimited against the ground; no darkening of veins along cord, as in *subareolata*; macrotrichia pale brown. Venation: Sc₁ ending shortly beyond R₂, Sc₂ less than twice its own length beyond origin of Rs; cell 1st M₂ small, as in the group; veins M₃, M₄, and Cu₁ strongly upcurved at tips; vein 2d A nearly straight.

Abdomen black, the elongate valves of ovipositor dark horn-color; bases of hypovalvæ and the genital segment blackened.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*).

In its dark gray thoracic color, with black legs and abdomen, the present fly differs notably from all its allies in eastern Asia. Compared with *Erioptera (Ilisia) subareolata* Alexander, likewise from western China, the present fly is readily told by the gray thorax and blackened legs.

ORMOSIA LATAURATA sp. nov. Plate 1, fig. 21; Plate 4, fig. 42.

Belongs to the *nigripila* group; general coloration black, the præscutum reddish brown; antennæ yellow, the bases of the flagellar segments narrowly infuscated; legs of male with basal half of femora black, the outer half golden yellow, tibiæ and basitarsi yellow; legs of female black, the extreme tips of femora and bases of tibiæ pale yellow; wings dark brown, abundantly dotted and spotted with white; male hypopygium with the outer arm of dististyle very long and slender; longest gonapophysis a slender, gently curved spine, gradually narrowed to the acute tip.

Male.—Length, about 3.5 to 3.7 millimeters; wing, 4.3 to 4.4.

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

Male.—Rostrum and palpi black. Antennæ relatively long, if bent backward extending to near middistance between roots of wings and halteres; antennæ yellow, the bases of the flagellar segment narrowly darkened, the amount of the latter color in-

creasing on the outer segments; flagellar segments elongate, with very long verticils at near midlength of the segments, these unilaterally arranged, together with a dense, erect, pale pubescence. Head brownish black.

Pronotum dark brown. Mesonotal præscutum rich reddish brown, without evident markings; posterior sclerites of mesonotum black, sparsely pruinose. Pleura black, sparsely pruinose. Halteres pale yellow, the stem slightly darkened at outer end, the knob golden yellow. Legs with the coxæ and trochanters black; femora black on basal half, the distal half or slightly less golden yellow, including the setæ, the proportion of yellow to black being slightly less on posterior legs where about two-fifths of the segment is brightened; tibiæ and basitarsi yellow, the outer tarsal segments brownish black. Wings (Plate 1, fig. 21) dark brown, abundantly dotted and spotted with white, all such spots being relatively small; larger white areas include the origin of R_s , Sc_2 , Sc_1 , and R_2 ; along cord and outer end of cell 1st M_2 ; marginal spots at R_{1+2} , R_3 , R_4 , and 1st A, the remaining marginal spots small; lesser markings include white droplets in outer radial field and in most of the cells basad of the cord, these areas variable in number and position; costal pale areas somewhat more yellowish white; veins dark, white and almost obliterated in the pale areas. Trichia of cells black, weaker and pale yellow in the white areas. Venation: Cell 1st M_2 closed; m-cu sinuous, shortly before fork of M; anal veins divergent.

Abdomen, including hypopygium, black. Male hypopygium (Plate 4, fig. 42) of the general structure of the group, but the outer lobe of the outer dististyle, *od*, of unusual length and slenderness. Inner dististyle, *id*, likewise unusually long and narrow, with four long setæ, beginning at the weakly angulated middle portion of the style, the outer seta placed on face of style remote from margin. Longest gonapophyses, *g*, appearing as long, very slender, acute spines that are gently curved.

Female.—Generally as in male. Antennæ shorter but similarly bicolorous. Femora and tibiæ black, only the extreme tip of the former and base of the latter pale yellow; tarsi black.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, Nwa Nien Pin Temple, altitude 6,500 feet, July 31, 1935 (*Franck*). Allotopotype, female, Chu Lao Tong Temple, altitude 6,000 to 7,000 feet, July 27, 1935. Paratopotypes, 2 males, with the type; 1 male with the allotype.

Ormosia lataurata and the species next described as *O. angustaurata* sp. nov. are among the most beautiful and distinct species of the genus so far made known. There is no closely related species so far described, but the two forms themselves are closely allied, differing most evidently in the antennal and leg coloration, wing pattern, and structure of the male hypopygium.

ORMOSIA ANGUSTAURATA sp. nov. Plate 4, fig. 43.

Male.—Length, 4 to 4.5 millimeters; wing, 4.7 to 5.

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

Closely allied to *O. lataurata* sp. nov., differing as follows:

Male.—Antennæ with basal segments yellow, those of outer half passing into dark brown, the individual segments not bicolorous, as in *lataurata*. Mesonotum somewhat darker, more infuscated. Legs with the femora black, the tips narrowly yellow; tibiæ obscure yellow; basitarsi obscure yellow, the tips narrowly darkened; remaining tarsal segments infuscated. Wings pale brown, with a conspicuous white pattern, the general arrangement much as in *lataurata*, but the areas larger and restricted to the vicinity of the veins; small droplets of *lataurata* lacking or greatly restricted in number; white areas at ends of anal veins large and conspicuous. In the holotype the pale costal areas at origin of R_s , Sc_2 , and Sc_1 are very large, reaching the costal border. Male hypopygium (Plate 4, fig. 43) much as in *lataurata*, especially as regards the outer dististyle, *od*. Inner dististyle, *id*, with five elongate setæ, the more basal near upper margin of style, the outermost close to the ventral edge. Gonapophyses, *g*, of entirely different structure from those of *lataurata*, the chief pair appearing about as illustrated.

Female.—Generally as in male, differing in the sexual characters. Tibiæ and tarsi dark brown or brownish black, a little paler than the femora.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*). Allotopotype, female. Paratopotypes, 2 males.

The two species of the *nigripila* group of *Ormosia* herewith described as *O. lataurata* and *O. angustaurata* bear a surprising superficial resemblance to various members of the subgenus *Mesocyphona* of the genus *Erioptera* in the Nearctic and Neotropical faunas, and to members of the *alboguttata* group of the typical subgenus *Erioptera* in eastern Asia.

ORMOSIA CURVISPINA sp. nov. Plate 1, fig. 22; Plate 4, fig. 44.

Belongs to the *similis* group; general coloration dull brownish black; antennæ (male) short; legs black; wings with a brown tinge; vein 2d A sinuous; abdomen, including hypopygium, black; male hypopygium with the inner arm of the outer pair of gonapophyses very strongly curved into a long black spine.

Male.—Length, about 3.8 millimeters; wing, 4.5.

Rostrum and palpi black. Antennæ (male) short, if bent backward ending at or a short distance before wing root, black throughout; flagellar segments oval, the verticils of the basal segments very long and conspicuous, the longest exceeding three times the length of the segment; beyond the fourth or fifth segments the verticils become shorter, on the outer ones being scarcely as long as the segments themselves. Head black.

Pronotum black, sparsely pruinose. Anterior lateral pretergites very restrictedly obscure yellow. Mesonotal præscutum dull brownish black, very sparsely pruinose, without markings; posterior sclerites of mesonotum brownish black. Pleura, including the dorsopleural region, dull black. Halteres with stem obscure, the knob light yellow. Legs with the coxæ brownish black; trochanters obscure yellow; remainder of legs black. Wings (Plate 1, fig. 22) with a brownish tinge, the stigmal region infuscated; veins brown, relatively stout; macrotrichia black. Trichia of the cells indicated in the figure by stippled dots. Venation: Sc_2 about opposite two-fifths the length of R_s ; R_{2+3} about one-third R_2 alone; outer fork of M perpendicular at origin, not angulated at point of union of m and the distal section of vein M_3 ; $m-cu$ close to fork of M ; vein 2d A sinuous on the outer third or less.

Abdomen, including the hypopygium, black. Male hypopygium (Plate 4, fig. 44) with the ninth tergite, *9t*, having the lateral lobes rounded, the structure divided by a profound median split; outer face with very delicate setulæ arranged in elongate-oval areas. Inner dististyle, *id*, unusually deep, with a slender apical beak, the entire outer margin, including the crest, narrowly blackened. Outer gonapophyses, *og*, bifid, the outer arm a black spike that bears a small lateral spine at near two-thirds the length; inner arm a powerful, strongly curved, black spine, the tip acute. Inner gonapophyses, *ig*, an even longer, gently curved spine, much paler in color than the outer apophyses, the apex slender and acute.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*).

Ormosia curvispina is entirely different from all other regional species of the *similis* group. As is usually the case in this and most other genera in the Tipulidæ, the chief specific characters are to be found in the structure of the male hypopygium.

ORMOSIA SOLITA sp. nov. Plate 1, fig. 23; Plate 4, fig. 45.

Belongs to the *aculeata* group; general coloration of mesonotal præscutum reddish brown, without distinct markings; antennæ dark brown, in the male the intermediate flagellar segments with verticils of an unusual length; halteres yellow; legs yellow, the femora with a narrow, subterminal, brown ring; wings brownish gray, variegated by light and darker areas, including a conspicuous white area beyond stigma; cell R₃ of moderate length only, vein R₃ strongly upcurved at margin; vein 2d A with nearly the outer half sinuous.

Male.—Length, about 4 millimeters; wing, 4.8.

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

Rostrum and palpi black. Antennæ of moderate length, dark brown throughout; flagellar segments subcylindrical, with unusually elongate verticils (male), on the intermediate segments these much exceeding the segments in length, on the outer segments becoming small and weak; terminal segment subequal in length to the penultimate. Head blackish gray, with yellow setæ.

Pronotum brown, the anterior lateral pretergites dirty white. Mesonotal præscutum reddish brown, without distinct markings, the interspaces with long yellow setæ; scutellum dusky; mediotergite and pleura blackish, the surface sparsely pruinose. Halteres yellow. Legs with the coxæ blackened; trochanters obscure yellow; femora yellow, with a narrow darkened subterminal ring that is subequal to or slightly more extensive than the yellow apex; indications of a second darkened ring, especially on forelegs, extensive but very diffuse and located nearer base of segment; tibiæ and tarsi yellow, the outer segments of the latter darkened. Wings (Plate 1, fig. 23) with a brownish gray tinge, sparsely variegated with darker, including the stigma and narrow seams along cord and outer fork of M; more whitish areas before cord and beyond stigma, the former crossing the cord into the base of cell M₃; outer end of cell M

less evidently darkened; surface of wing with abundant macrotrichia, these being black and coarser in the clouded patches, more delicate and pale yellow in the clear areas and elsewhere over the wing surface in scattered patches; costal fringe variegated with black and yellow setæ; veins brownish yellow, darker and narrowly seamed with dusky in certain regions of the wing. Macrotrichia of cells abundant (shown in figure by stippled dots). Venation: R_2 at or beyond fork of R_{3+4} ; outer fork of M not angulated; $m-cu$ conspicuously arcuated at near mid-length; vein $2d A$ strongly sinuous, the arcuated portion occupying nearly one-half of the entire vein beyond arculus.

Abdomen, including hypopygium, dark brown. Male hypopygium (Plate 4, fig. 45) with the tip of the basistyle, *b*, terminating in an acute sclerotized point. Dististyles subterminal in position, the inner one, *id*, strongly arcuated before midlength, the apex dilated into a head that terminates in an acute spine.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, White Cloud Temple, altitude 9,000 feet, at light, July 29, 1935 (*Franck*). Allotopotype, female, Nwa Nien Pin Temple, altitude 6,500 feet, July 31, 1935.

The other members of the *aculeata* group, as *aculeata* Alexander (Japan), *anthracopoda* Alexander (Formosa), *horiana* Alexander (Japan), and *lævistyla* Alexander (Japan), are all readily told by the different structure of the male hypopygia. The most similar regional species is *Ormosia auricosta* Alexander, of which the male sex is still unknown. The last species differs especially in the larger size and distinct features of venation and pattern of the wings, as the more extensively pale costa, the lack of a white poststigmatal area, the presence of conspicuous marginal dark dots at ends of the longitudinal veins, and the feebly sinuous vein $2d A$. It seems virtually certain that *auricosta* will likewise be found to belong to the *aculeata* group of the genus, although the somewhat similar *O. præcisa* Alexander is a member of the distinct *similis* group.

STYRINGOMYIA ANGUSTIPENNIS sp. nov. Plate 1, fig. 24.

General coloration medium brown; antennal flagellum yellow; femora obscure yellow, with two weak and diffuse brown rings; tibiæ with tips narrowly darkened and with a vague second ring at near basal third; wings narrow, especially near base, tinged with brownish yellow, unmarked; veins beyond costal area brown, contrasting against the ground; ovipositor with the longest valves blackened, glabrous, terminating in two long strong setæ.

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

Rostrum and palpi brown. Antennæ with the scape brown, darker beneath; pedicel brownish yellow; flagellum yellow; flagellar segments oval, gradually decreasing in length outwardly. Head yellowish brown.

Mesonotum discolored in type, apparently medium brown, variegated by darker brown areas, especially on the posterior sclerites. Pleura crushed. Legs with the femora obscure yellow, weakly biannulate with pale brown, the subterminal ring narrower than the yellow apex, the postmedial ring very diffuse; tibiæ yellow, the tip narrowly infuscated, with very vague indications of a second annulus near basal third of segment; basitarsi yellow, the outer tarsal segments slightly darkened, especially apically, the terminal segment black. Wings (Plate 1, fig. 24) tinged with brownish yellow, unpatterned, the costal portion somewhat clearer yellow, especially the veins; veins beyond the costal portion brown, contrasting against the ground. Wings narrow, especially near base, best shown by narrowing of the cubital and anal cells. Venation: Cell 1st M_2 elongate, nearly equal in length to the longest veins beyond it; m-cu a little more than its own length beyond the fork of M; vein 2d A simple, the cell narrow.

Abdomen uniformly light brown. Ovipositor with the longest valves, apparently cerci, appearing as long blackened cones, the surface glabrous, at apex of each with two, long, powerful setæ that are a little longer than the valve itself; a further shorter seta on outer face near base.

Habitat.—China (Szechwan).

Holotype, female, Mount Omei, Chu Lao Tong Temple, altitude 6,000 to 7,000 feet, at light, July 27, 1935 (*Franck*).

The nearest regional allies of the present fly are species such as *Styringomyia flava* Brunetti (southern India) and *S. taiwanensis* Alexander (Formosa), which have similarly unpatterned wings and simple vein 2d A. The present fly is well distinguished from the above and other generally similar regional forms by the brown veins that contrast strongly with the ground color of the unusually narrow wings.

ILLUSTRATIONS

[Legend: *a*, Aedeagus; *at*, antenna; *b*, basistyle; *d*, dististyle; *g*, gonapophysis; *i*, interbase; *id*, inner dististyle; *ig*, inner gonapophysis; *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 (Trichotipula) longifimbriata* sp. nov.; venation.
2. *Tipula (Trichotipula) mallophora* sp. nov.; venation.
3. *Tipula (Schummelia) membranifera* sp. nov.; venation.
4. *Tipula (Schummelia) dissociata* sp. nov.; venation.
5. *Tipula (Acutipula) forticauda* sp. nov.; venation.
6. *Tipula (Acutipula) subintacta* sp. nov.; venation.
7. *Tipula (Vestiplex) avicularoides* sp. nov.; venation.
8. *Tipula (Oreomyza) prolongata* sp. nov.; venation.
9. *Stibadocerella omeiensis* sp. nov.; venation.
10. *Limonia (Limonia) omniflava* sp. nov.; venation.
11. *Limonia (Limonia) tessellatipennis* sp. nov.; venation.
12. *Limonia (Dicranomyia) sternolobata* sp. nov.; venation.
13. *Adelphomyia (Adelphomyia) cerina* sp. nov.; venation.
14. *Phyllolabis laudata* sp. nov.; venation.
15. *Phyllolabis vulpecula* sp. nov.; venation.
16. *Franckomyia discalis* sp. nov.; venation.
17. *Trentepohlia (Mongoma) enervata* sp. nov.; venation.
18. *Gonomyia (Ptilostenodes) amacula* sp. nov.; venation.
19. *Gonomyia (Gonomyia) octospinosa* sp. nov.; venation.
20. *Erioptera (Ilisia) postrema* sp. nov.; venation.
21. *Ormosia lataurata* sp. nov.; venation.
22. *Ormosia curvispina* sp. nov.; venation.
23. *Ormosia solita* sp. nov.; venation.
24. *Styringomyia angustipennis* sp. nov.; venation.

PLATE 2

- FIG. 25. *Tipula (Trichotipula) longifimbriata* sp. nov.; male hypopygium, details.
26. *Tipula (Trichotipula) mallophora* sp. nov.; male hypopygium, details.
27. *Tipula (Schummelia) membranifera* sp. nov.; male hypopygium, details.
28. *Tipula (Schummelia) dissociata* sp. nov.; male hypopygium, details.
29. *Tipula (Acutipula) forticauda* sp. nov.; male hypopygium, details.
30. *Tipula (Acutipula) subintacta* sp. nov.; male hypopygium, details.

PLATE 3

- FIG. 31. *Tipula (Vestiplex) avicularoides* sp. nov.; male hypopygium, details.
32. *Tipula (Oreomyza) prolongata* sp. nov.; male hypopygium, details.
33. *Limonia (Limonia) omniflava* sp. nov.; male hypopygium.
34. *Limonia (Limonia) tessellatippennis* sp. nov.; male hypopygium.
35. *Limonia (Dicranomyia) sternolobata* sp. nov.; male hypopygium.
36. *Adelphomyia (Adelphomyia) cerina* sp. nov.; male hypopygium.
37. *Phyllolabis laudata* sp. nov.; male hypopygium.
38. *Phyllolabis pictivena* Alexander; male hypopygium, details.

PLATE 4

- FIG. 39. *Franckomyia discalis* sp. nov.; antenna, male hypopygium.
40. *Gonomyia (Ptilostenodes) amicula* sp. nov.; male hypopygium.
41. *Gonomyia (Gonomyia) octospinosa* sp. nov.; male hypopygium.
42. *Ormosia lataurata* sp. nov.; male hypopygium.
43. *Ormosia angustaurata* sp. nov.; male hypopygium.
44. *Ormosia curvispina* sp. nov.; male hypopygium.
45. *Ormosia solita* sp. nov.; male hypopygium.

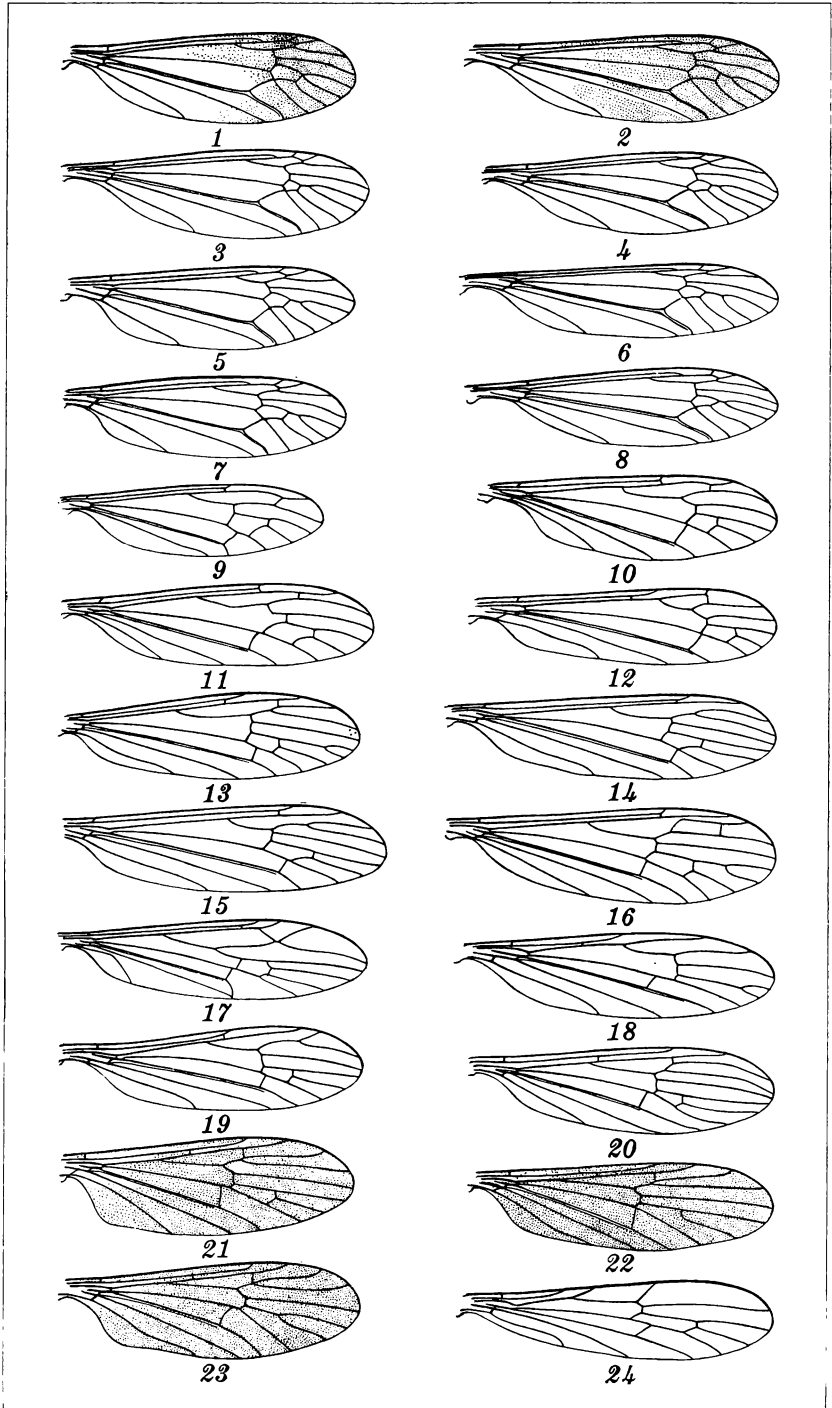


PLATE 1.

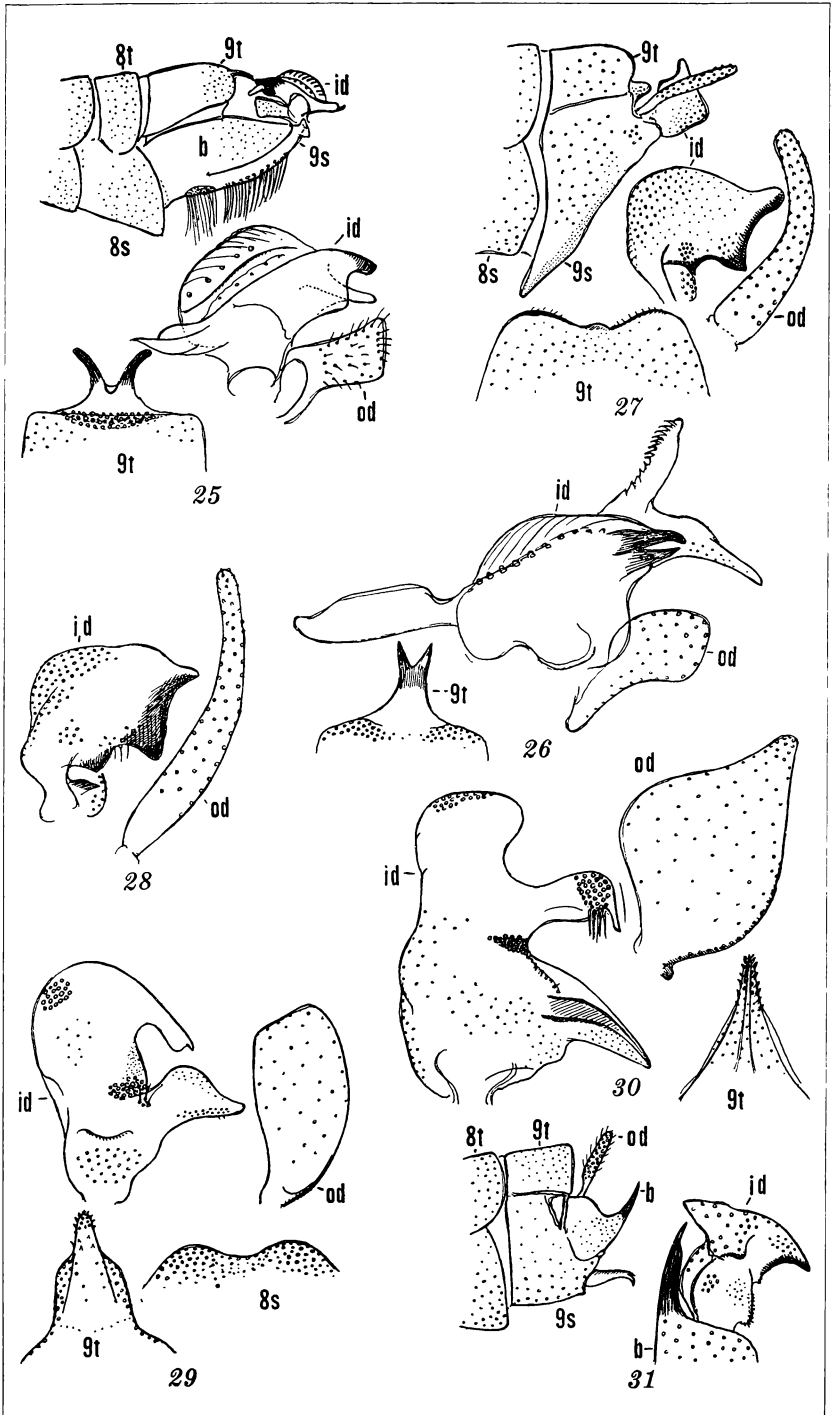


PLATE 2.

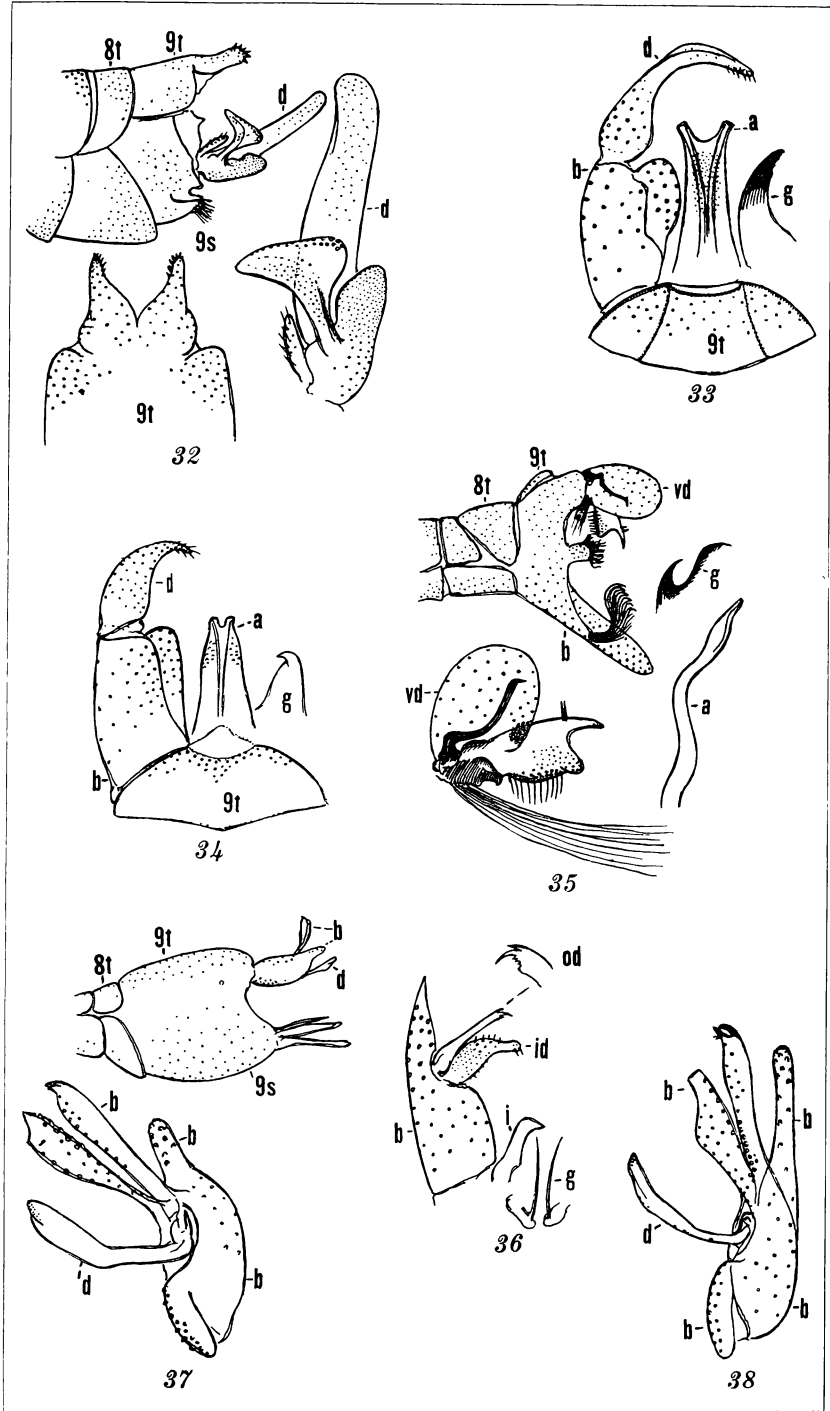
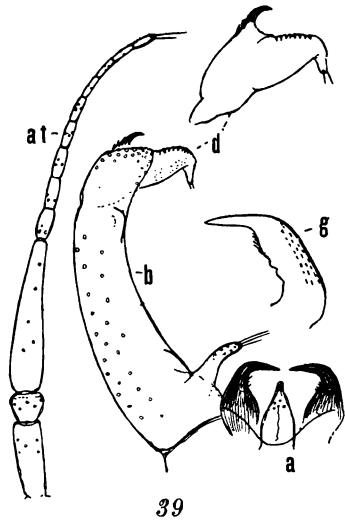
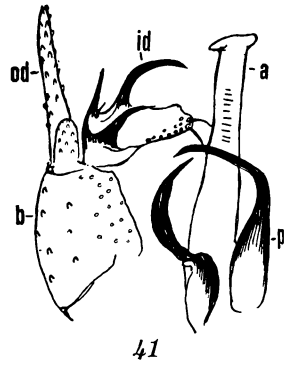


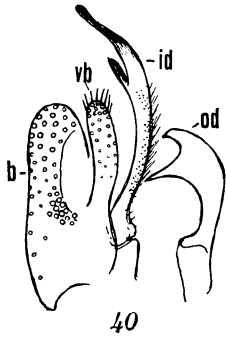
PLATE 3.



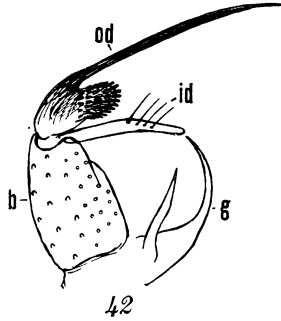
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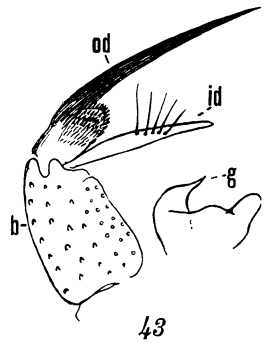
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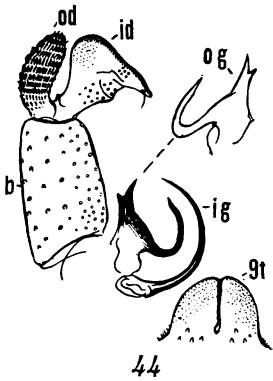
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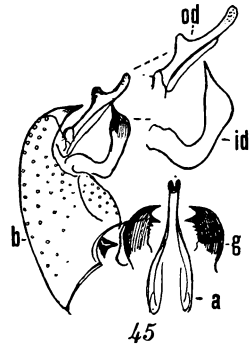
42



43



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