

NEW OR LITTLE-KNOWN TIPULIDÆ FROM EASTERN
ASIA (DIPTERA), XVIII¹

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THREE PLATES

The crane flies discussed herein have been derived from a variety of sources, but chiefly from western China, where they were collected by the Rev. Mr. George M. Franck, and from Japan and Formosa, where taken by Mr. Syûti Issiki. Types of such species are preserved in my collection, through the kind interest of the collectors. Other specimens discussed are included in the Russian Academy of Sciences, Leningrad, through Drs. Pleske and von Stackelberg; in the Macleay Collection of the University of Sydney, through Mr. Frank H. Taylor; Federal Collection at Canberra, Australia, through Dr. Ian Mackeras; Bishop Museum, Honolulu, through Mr. Edwin H. Bryan; and Sumatran material collected by Mr. Edward Jacobson, now preserved in the United States National Museum, through the interest of the collector. As before, I am greatly indebted to all of the scientists mentioned, for their continued interest in saving these flies.

Among the Tipulidæ collected by Mr. Issiki in Hokkaido and Honshiu, Japan, were included a number of interesting records that are listed herewith.

Sôunkyô, Hokkaido, June 4, 1932 (S. Issiki).

- Limonia (Limonia) fusca* Meigen.
- Pedicia (Nasiternella) hokkaidensis* sp. nov.
- Pedicia (Tricyphona) optabilis* Alexander.
- Pedicia (Tricyphona) seticauda* Alexander.
- Dicranota (Rhaphidolabis) spina* Alexander.
- Pseudolimnophila mobilis* sp. nov.
- Limnophila (Prionolabis) sounkyana* sp. nov.
- Ormosia takeuchii* Alexander.

¹ Contribution from the entomological laboratory, Massachusetts State College.

Yumoto, Shimotsuke, Honshiu, altitude 4,850 feet, June 20, 1932 (S. Issiki).

- Limonia* (*Limonia*) *euphileta* Alexander.
Dicranota (*Rhaphidolabis*) *platymera* sp. nov.
Pseudolimnophila yumotana sp. nov.
Limnophila (*Limnophila*) *japonica* Alexander.
Limnophila (*Tricholimnophila*) *prionolaboides* sp. nov.
Ormosia rectangularis sp. nov.
Erioptera (*Hoplolabis*) *asiatica* Alexander.
Molophilus pegasus Alexander.
Molophilus triacanthus sp. nov.

Lake Chuzenji, Shimotsuke, Honshiu, altitude 4,100 feet, June 22, 1932
 (S. Issiki).

- Pseudolimnophila erecta* sp. nov.
Limnophila (*Prionolabis*) *inermis* sp. nov.
Limnophila (*Prionolabis*) *odai* Alexander.
Limnophila (*Tricholimnophila*) *saitamæ* Alexander.

Konseitoge, Shimotsuke, Honshiu, altitude 5,200 to 6,500 feet, June 21, 1932
 (S. Issiki).

- Limonia* (*Dicranomyia*) near *depauperata* Alexander.
Pseudolimnophila erecta sp. nov.
Limnophila (*Prionolabis*) *luteibasalis* sp. nov.

LIMONIINÆ

LIMONIINI

LIMONIA (LIMONIA) FUSCA Meigen.

- Limonia fusca* MEIGEN, Klassifikation 1 (1804) 54.
Limnobia turpis WALKER, Insecta Britannica, Diptera 3 (1856) 300.
Dicranomyia pubipennis OSTEN SACKEN, Proc. Acad. Nat. Sci. Philadelphia for 1859 (1859) 211.
Limnobia pilipennis EGGER, Verh. Zool.-Bot. Ges. Wien 13 (1863) 1108.

Two males, Sôunkyô, Hokkaido, Japan, June 4, 1932 (S. Issiki). This wide-spread Holarctic crane fly has not hitherto been recorded from eastern Asia.

LIMONIA (LIBNOTES) FIJIENSIS DELANDI subsp. nov.

Male.—Length, about 6 millimeters; wing, 7.

Sclerites of mesonotum behind the transverse suture almost uniformly darkened. Wings with dark pattern reduced, the stigma much smaller than in males of typical *fijiensis*. Venation: Sc long, Sc₁ ending beyond r-m, Sc₂ some distance from its tip, opposite fork of Rs; Rs unusually short and only slightly arcuated, about two-thirds as long as the corresponding vein in *fijiensis*. Male hypopygium with the caudal border of tergite evenly, convexly rounded, with a tiny median notch; setæ at the

exact border, those nearest the median notch more or less decussate. Basistyle with ventral-apical lobe long and slender, exceeding in length the basistyle itself, with four or five setæ at midlength more elongate and powerfully constructed; apex of lobe microscopically transverse-corrugated. Dististyle broad, at base with a small bisetiferous tubercle and a tiny acute spine; apical teeth approximated, the outer one slender. Gonapophyses elongate.

Habitat.—Santa Cruz Islands.

Holotype, male, Vanikoro Island (*C. M. Deland*). Received through Mr. Frank H. Taylor, to whom the type has been returned.

The present fly seems to be closest to *Limonia (Libnotes) fijiensis hebridensis* (Edwards), of New Hebrides, differing in the even shorter Rs and in the details of the male hypopygium. Whether the *fijiensis* group will be found to include several closely allied and vicarious species (as *toxopei* Edwards, of Buru; *veitchiana* Edwards, of Fiji, additional to the forms mentioned above) or whether these are best considered as being geographic races, cannot be affirmed without much more material than has yet been available. Edwards² has reported a variety of *fijiensis* from Samoa. He describes the apical lobe of the basistyle as being much shorter than in *fijiensis*, as figured by me,³ whereas in the present fly it is distinctly longer.

LIMONIA (DICRANOMYIA) AMURENSIS (Alexander).

Dicranomyia amurensis ALEXANDER, Proc. U. S. Nat. Mus. 68 art. 4 (1925) 5-6, fig. 1 (male hypopygium).

Described from a single male, Amagu Village, Ussuri, July 1923 (*T. D. A. Cockerell*). An additional male, Kuegda, Saghalien, July 10, 1908 (*W. Soldatov*); Academy of Sciences, Leningrad.

A few supplementary notes are given: Thoracic pleura gray, the dorsopleural region more infuscated. Venation: m-cu about one-third its length before fork of M. Male hypopygium about as described and figured in original definition, with certain emendations. Cephalic mesal margin of ventral dististyle, below base of rostral prolongation with a conspicuous group or pencil of setæ. Apex of basistyle on mesal face with a dense group of setæ.

² *Insects of Samoa, Diptera Nematocera* (1928) 80-81.

³ *Ann. Ent. Soc. America* 7 (1914) 246, fig. 8.

The species is allied to the Nearctic *gibsoni* (Alexander), *hæretica* (Osten Sacken), and *penicillata* (Alexander), but is still very different in the structure of the male hypopygium.

LIMONIA (DICRANOMYIA) PLATYROSTRA (Alexander).

Dicranomyia platyrostra ALEXANDER, Can. Ent. 59 (1927) 223-224, fig. 2 (male hypopygium).

This species was described from the Lesser Slave Lake, Alberta, Canada, taken in mid-August by Owen Bryant. In the Academy of Sciences, Leningrad, a male from Shiveluch Volcano, near Nizhnekamchatsk, Kamchatka, 162° 30' east longitude, 56° 40' north latitude, August 27, 1909 (*P. Schmidt*).

This has been compared with the type, and I can see no differences with the single exception that the rostral spines are a little shorter in the present specimen than in the type.

LIMONIA (GERANOMYIA) UNIFILOSA sp. nov. Plate 1, fig. 1; Plate 2, fig. 25.

General coloration of thorax bluish gray, the præscutum with a darker median stripe; head blackish, the posterior vertex with a narrow grayish median line; legs yellow; wings with a brown pattern, including small marginal clouds at ends of outer medial veins; m-cu close to fork of M; male hypopygium with the rostral prolongation bearing a single, very slender spine; gonapophyses with lateral tooth on mesal-apical lobe.

Male.—Length, excluding rostrum, about 6 millimeters; wing, 6.3; rostrum, about 2.

Rostrum black throughout; palpi black. Antennæ black; flagellar segments oval. Head blackish, the posterior vertex with a narrow grayish median line, extending caudad onto the occiput.

Mesonotal præscutum above bluish gray, with deep reddish tints; a broad median blackish stripe, the lateral margins apparently similarly darkened, but the coloration changeable in different lights; posterior sclerites of mesonotum darkened, the scutellum with a darker median area. Pleura blackish, the sternopleurite brightened to reddish. Halteres pale, the knobs dusky. Legs with the coxæ and trochanters yellow, the posterior coxæ somewhat darker; remainder of legs pale yellow, the outer tarsal segments a trifle darker. Wings (Plate 1, fig. 1) broad, the ground color pale brownish; a moderately heavy brown pattern, chiefly costal in distribution, but including smaller marginal spots at ends of all longitudinal veins; second area (at supernumerary crossvein in cell Sc) reaching vein M; stigmal area produced backward to vein R₄₊₅; apical darkenings

in outer radial and medial fields forming a broken, nearly terminal band; narrow brown seams along cord and outer end of cell 1st M_2 ; veins pale yellow, darker in the clouded areas. Venation: Sc_1 ending about opposite three-fourths the length of Rs , Sc_2 near its tip; a supernumerary crossvein in cell Sc ; free tip of Sc_2 and R_2 subequal; $m-cu$ close to fork of M .

Abdominal tergites dark brown, sternites more reddish; hypopygium dark. Male hypopygium (Plate 2, fig. 25) with the tergite, $9t$, transverse, the caudal margin deeply emarginate, the lateral lobes obtusely rounded. Basistyle, b , relatively small, the ventromesal lobe of moderate size. Dorsal dististyle strongly curved at near two-thirds the length. Ventral dististyle, vd , fleshy, larger than the basistyle; rostral prolongation long and stout, bearing a single long, very slender spine from an enlarged basal tubercle close to tip of prolongation; no trace of a second rostral spine. Gonapophyses, g , with the mesal-apical lobe long, obtuse at tip, bearing a slender erect spine at near midlength. \AA edeagus, a , large, the apex distinctly bilobed.

Habitat.—Formosa.

Holotype, male, Shinten, near Taihoku, December 12, 1929 (*S. Issiki*).

The present fly is closest to *Limonia* (*Geranomyia*) *septemnotata* (Edwards), of Formosa, and *L. (G.) tenuispinosa* (Alexander), of eastern China. The former is still known only from the unique type female, taken in the high mountains; it differs in the coloration of the head and pleura, the pale brown legs, and the details of wing pattern, especially the coloration of the outer medial field. The latter fly has a somewhat similar male hypopygium but a very different wing pattern and venation. The single very slender spine of the rostral prolongation of the male hypopygium of the present species is very different from that of all other regional members of the subgenus, though suggested by *tenuispinosa*, where the second spine lies near the base of the prolongation and is small, tending to be reduced. The possibility exists that such a spine occurs in the present fly and is broken, but I can detect no trace of its former presence.

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

Allied and generally similar to *javanica*; general coloration of præscutum dark brown, almost covered by three light gray stripes, the median one split by a capillary brown median vitta; scutellum gray; halteres pale yellow; femora obscure yellow, the tips brownish black; wings whitish, with a dark brown,

chiefly costal pattern; male hypopygium with the tergite deeply notched medially; ventral dististyle very large and fleshy, the rostral spines arising from a long and powerful common basal tubercle, the outer spine from a smaller, slenderer tubercle.

Male.—Length, excluding rostrum, about 7 millimeters; wing, 7.2; rostrum, about 2.

Rostrum relatively short and stout, black, the surface with short erect setulæ. Antennæ black throughout; basal flagellar segments short-cylindrical, the outer more elongate, suboval; terminal segment subequal to penultimate. Anterior vertex light gray, the posterior vertex brownish black, divided medially by a narrow gray line extended backward from the anterior vertex.

Ground color of præscutum dark brown almost covered by three light gray stripes, the median one split by a capillary median brown vitta that ends at the suture; lateral interspaces reduced to narrow lines; scutum gray, the mesal edge of each lobe with a dark brown line; scutellum gray; mediotergite gray, with a brown median triangle, the point directed caudad. Pleura more or less darkened dorsally, the sternopleurite and pleurotergite light gray. Halteres pale yellow. Legs with the coxæ and trochanters greenish yellow; femora obscure yellow, the tips brownish black; tibiæ and basitarsi yellowish brown, the tips narrowly dark brown; terminal tarsal segments black. Wings (Plate 1, fig. 2) with the ground color whitish, with a dark brown, chiefly costal pattern, that is arranged about as in *javanica*; pale interspaces more extensive than in the latter, the darkened area at midlength of cell Sc conspicuously narrowed in cell R; dark area at end of vein R₃ with a small pale central spot above the tip of vein; no darkening in cell R₅ beyond cord; veins brown, somewhat darker in the infuscated areas. Venation: Sc₂ ending distinctly beyond midlength of the angulated and weakly spurred Rs; m-cu at fork of M.

Abdominal tergites dark brown, the caudal borders of the intermediate segments somewhat paler. Male hypopygium (Plate 2, fig. 26) with the tergite, 9t, deeply notched medially, the rounded lobes with numerous setæ of moderate length. Basistyle, *b*, small. Ventral dististyle, *vd*, very large and fleshy, its area several times that of the basistyle; rostral prolongation small, with a conspicuous armature, consisting of a long fused basal tubercle bearing two powerful curved spines, the outermost of which arises from a further swollen basal portion; under

high magnification, each of these spines has a median split throughout the length, being apparently formed from the fusion of two slenderer spines. Dorsal dististyle small, sickle-shaped, subequal to the rostral spines. Gonapophyses, *g*, with the mesal-apical blade flattened, its margin with microscopic denticles. Ædeagus, *a*, with numerous delicate setulæ on either side back from tip.

Habitat.—Bali.

Holotype, male, July 1–2, 1929 (*I. M. Mackerras*).

Limonia (*Geranomyia*) *baliana* is closest to *L. (G.) javanica* (Alexander), of western Java, differing chiefly in the colorational details, as the yellow halteres and the conspicuous whitish ground color of the wings. The male sex of *javanica* is still unknown and the hypopygium will very probably yield other characters, since it belongs to a group that shows great diversity in hypopygial details. The general type of hypopygium of the present fly, with two rostral spines arising from a long common basal tubercle, is found in several other Oriental and eastern Palæarctic species of the subgenus, as *L. (G.) apicifasciata* (Alexander), *L. (G.) immobilis* (Alexander), *L. (G.) multipuncta* (Alexander), *L. (G.) phænosoma* (Alexander), and others, but all details are quite distinct.

LIMONIA (GERANOMYIA) JAVANICA KOCKENSIS subsp. nov.

Characters as in typical *javanica* Alexander (western Java), differing in colorational details, especially the gray sternopleurite and sternum and the black legs.

Posterior vertex blackened, with a median gray line that is a caudal extension of the narrow anterior vertex. Pleura entirely gray, the dorsal sclerites darker. Halteres yellow, the knobs dark brown. Legs beyond the trochanters black, only the femoral bases very narrowly and restrictedly paler. Abdominal sternites obscure yellow.

Habitat.—Sumatra.

Holotype, female, Fort de Kock, altitude 3,000 feet, 1925 (*E. Jacobson*). Paratopotype, female.

LIMONIA (GERANOMYIA) VANIKORENSIS sp. nov. Plate 1, fig. 3.

General coloration of mesonotal præscutum chestnut brown, paler laterally; rostrum, palpi, and antennæ black, legs dark brown to black; wings grayish subhyaline, with about six small costal and subcostal darkenings, the last two at ends of veins R_3 and R_{4+5} ; R_s angulated near origin.

Female.—Length, excluding rostrum, about 6.5 millimeters; wings, 7.2; rostrum, about 3.2.

Rostrum elongate, black throughout; palpi 1-segmented. Antennæ black throughout; flagellar segments subcylindrical, not or scarcely decreasing in length outwardly, the last elongate. Head black, the narrow anterior vertex light gray, the color continued back onto the mid-region of posterior vertex as a narrow line.

Pronotum brownish black, paler laterally. Mesonotal præscutum deep chestnut brown on disk, the humeral and lateral portions more yellowish; scutal lobes dark brown, the median region and scutellum more testaceous; mediotergite reddish testaceous. Pleura chiefly reddish brown. Halteres pale, the knobs infuscated. Legs with the coxæ and trochanters reddish testaceous; remainder of legs dark brown to black, the femoral bases a little paler. Wings (Plate 1, fig. 3) grayish subhyaline, with about six small costal and subcostal darkenings, the first at the supernumerary crossvein in cell Sc, the second at origin of Rs, third at fork of Sc; fourth, paler, the small subcircular stigma; last two areas at ends of veins R_3 and R_{4+5} ; cord and outer end of cell 1st M_2 narrowly seamed with paler brown; veins brown, somewhat darker in the clouded areas. Venation: A weak supernumerary crossvein in cell Sc; vein Sc relatively long, Sc_1 ending shortly before fork of Rs, Sc_2 at its tip; free tip of Sc_2 and R_2 about in transverse alignment; Rs from about two and one-half to nearly three times as long as the basal section of R_{4+5} , markedly angulate near origin; m-cu shortly beyond fork of M.

Abdomen chiefly dark brown, the genital region more yellowish. Ovipositor with cerci moderately long, nearly straight, the tips broadly and obtusely rounded.

Habitat.—Santa Cruz Islands.

Holotype, female, Vanikoro Island (*C. M. Deland*). Received through Mr. Frank H. Taylor, to whom the type has been returned.

The only other member of the subgenus from the smaller and more-remote Pacific Islands is *Limonia* (*Geranomyia*) *samoana* (Edwards), of Samoa, which is the species most generally similar to the present fly. It differs in the details of body coloration, wing pattern, and venation. *Limonia* (*G.*) *sagittifer* (Alexander), of North Queensland, is also somewhat closely allied to both of the above, yet evidently distinct by the coloration of the body and wings and in the venational details.

LIMONIA (PSEUDOGLOCHINA) BRYOPHILA sp. nov. Plate 1, fig. 4; Plate 2, fig. 27.

Mesonotum dark brown, the cephalic and lateral portions of præscutum abruptly yellowish white; a narrow pale median vitta extends from the præscutum to base of abdomen; pleura yellowish white, the sternopleurite and fore coxæ dark brown; tibiæ with two narrow dark rings, widely separated; wings with a strong brown tinge, the costal region still darker; Sc₁ ending opposite or before midlength of Rs; medial forks short; vein 2d A relatively long and extended.

Male.—Length, about 5.5 millimeters; wing, 6.

Female.—Length, about 5.5 to 6 millimeters; wing, 6 to 6.5.

Rostrum brown; palpi brownish black. Antennæ brownish black throughout, nodulose, the individual flagellar segments oval, with short but distinct necks. Head pale yellowish brown.

Pronotum pale yellow. Mesonotum chiefly dark brown, the projecting præscutum abruptly pale yellowish white on front and sides; a narrow capillary pale line begins on the præscutum, extending caudad to abdomen, widest on the scutellum and base of mediotergite. Pleura almost entirely yellowish white, contrasting abruptly with the mesonotum; ventral sternopleurite dark brown. Halteres dark brown. Legs with the fore coxæ and trochanters dark brown, the remaining coxæ and trochanters pale yellow; forelegs broken; mid-femora dirty white, becoming clearer on outer third, the tip very narrowly darkened; posterior femora white, the distal fifth abruptly blackened; tibiæ pure white, with two very narrow, subequal, brownish black rings, the distance between them about equal to six or seven times the width of either ring; tarsi white. Wings (Plate 1, fig. 4) with a strong brown tinge, the costal region more saturated; stigma oval, dark brown; a small brown cloud at origin of Rs; veins brown. Venation: Sc ending opposite or just before midlength of Rs; Rs and basal section of R₄₊₅ only slightly oblique in position; medial forks short; m-cu variable in position, in cases about one-half its length before fork of M; vein 2d A relatively long and extended.

Abdominal tergites dark brown, the sternites pale yellow; outer sternites more or less darkened basally. Male hypopygium (Plate 2, fig. 27) with the tergite, 9t, shallowly notched. Dorsal dististyle pale yellow. Ventral dististyle, *vd*, large and fleshy, much exceeding the basistyle in size, the rostral prolongation with a single pale spine. Gonapophyses, *g*, with mesal-apical lobe stout.

Habitat.—China (Szechwan).

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

The closest ally of the present fly is *Limonia* (*Pseudoglochina*) *riukiensis* Alexander (Japan: Riukiu Islands), which differs in the more oblique anterior cord, deeper medial forks, and more elongate and extended vein 2d A. The macrotrichia of the wing veins in *riukiensis* are longer and more abundant, including nearly the outer half of M and the outer end of the basal section of Cu₁. The present fly was associated on mossy cliffs with specimens of the superficially rather similar *Limonia* (*Limonia*) *unicinctifera* Alexander.

ORIMARGA (ORIMARGA) NUDIVENA sp. nov. Plate 1, fig. 5; Plate 2, fig. 28.

General coloration dark grayish brown, the ventral surfaces of thorax and abdomen reddish; antennæ black; wings broad; costal fringe (male) long and conspicuous; macrotrichia of veins very sparse, lacking on R₃; R₁₊₂ about twice R₂, the latter subequal to R₂₊₃; vein 2d A elongate; male hypopygium with the armature of the phallosome conspicuously developed as spinous points.

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

Rostrum reddish brown. Antennæ black throughout; flagellar segments short-oval. Head dark gray.

Mesonotum grayish brown, the præscutum indistinctly striped. Pleura reddish brown. Halteres brown. Legs with coxæ and trochanters reddish; remainder of legs black. Wings (Plate 1, fig. 5) broad, widest opposite level of outer end of cell 1st A; color grayish, veins pale brown. Costal fringe very long and erect; macrotrichia of veins very sparse, with a scattered series on vein R, distal section of R₅ and outer end of M₁₊₂; no trichia on vein R₃. Venation: R₁₊₂ about twice R₂, the latter subequal to R₂₊₃; basal section of R₄₊₅ angulated at origin; vein 2d A elongate, ending opposite level of m-cu.

Abdominal tergites dark brown, the sternites reddish. Male hypopygium (Plate 2, fig. 28) with the armature of the phallosome, *p*, well-developed and conspicuous.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 3,000 feet, July 8, 1932 (*Franck*).

Orimarga (*Orimarga*) *nudivena* is well-distinguished from all regional allies by the unusual glabrousness of the wing veins

and the conspicuous development of the phallosomic region of the male hypopygium.

ORIMARGA (ORIMARGA) ÆQUIVENA sp. nov. Plate 1, fig. 6.

General coloration of body blackish gray; wings with a grayish tinge; costal fringe of moderate length in both sexes; macrotrichia of veins numerous, including a complete series on vein R_3 ; R_{2+3} and R_2 subequal.

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

Female.—Length, about 5 millimeters; wing, 4.6.

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

Thorax dark blackish gray, the præscutum without stripes. Halteres pale, the knobs blackish. Legs with the fore coxæ brownish black, the remaining coxæ somewhat paler; trochanters pale brown; femora light yellowish brown, the tips dark brown; tibiæ and tarsi pale brown, the outer tarsal segments blackened. The legs are more uniformly blackened in the female. Wings (Plate 1, fig. 6) with a grayish tinge, darker in the female; veins brown. Costal fringe of moderate length only; macrotrichia of veins short but numerous, including complete series on veins R_3 , R_{4+5} , M_3 , M_4 , and all of M_{1+2} except the base. Venation: Sc_1 ending opposite two-thirds Rs , Sc_2 near its tip; R_{2+3} subequal to R_2 , the latter a little longer than R_{1+2} ; free tip of Sc_2 pale but evident, R_1 subequal to R_{1+2} ; forks of medial cells of moderate depth; m-cu opposite basal fourth or fifth of Rs . In the female, R_{1+2} is longer, being nearly twice R_2 alone; medial forks deeper.

Abdomen brownish black, the sternites a trifle brighter.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 4,200 feet, July 5, 1932 (*Franck*). Allotype, female, altitude 4,800 feet, July 4, 1932 (*Franck*). Paratypes, altitude 4,200 feet, June 29 to July 5, 1932; altitude 4,800 feet, July 4, 1932.

Of the species of *Orimarga* so far discovered in western China, the only species with a somewhat similar venation is *O. (O.) cruciformis* Alexander, which is readily told by the unusually long narrow wings, with long basal petiole and with a cruciform arrangement of veins at end of Rs . The Formosan species *O. (O.) fuscivenosa* Alexander and *O. (O.) taiwanensis* Alexander have a somewhat similar arrangement of veins in the radial field, but are distinguishable by the shape of the wing and the venation, *fuscivenosa* having the wings unusually narrow, cell

M_3 deeper, and cell 2d A narrower; *taiwanensis* differs in the yellowish wings, with pale veins, and in the slightly different venational details.

PEDICIINI

PEDICIA (NASITERNELLA) HOKKAIDENSIS sp. nov. Plate 1, fig. 7; Plate 2, fig. 29.

Allied to *hyperborea*; mesonotal præscutum yellowish gray, with four dark brown stripes; legs with femora obscure yellow to brownish yellow, the tips narrowly dark brown; wings yellowish, heavily patterned with brown; costal darkenings between Sc_2 and origin of Rs widely separated, between Rs and tip of Sc_1 narrowly separated; male hypopygium with setæ at end of arm of basistyle relatively short and inconspicuous; interbase with outer end suddenly narrowed.

Male.—Length, about 11 to 12 millimeters; wing, 11 to 11.5.

Rostrum and palpi dark brown. Antennæ broken. Head dark gray.

Mesonotal præscutum yellowish gray, with four dark brown stripes, the intermediate pair only narrowly separated, confluent at anterior ends, the posterior ends not reaching the suture; scutal lobes variegated with dark brown; scutellum dark brown, obscure yellow beneath; mediotergite dark brownish gray. Pleura brownish gray. Halteres broken. Legs with coxæ pale, darker basally, more extensively so on posterior legs; trochanters yellow; femora obscure yellow to brownish yellow, the tips narrowly dark brown; tibiæ pale brown, the tips very narrowly dark brown; tarsi pale brown, the outer segments darker. Wings (Plate 1, fig. 7) with the ground color strongly yellowish, heavily patterned with brown, chiefly as large marginal clouds at ends of all longitudinal veins; areas at Sc_2 and origin of Rs widely separated, the pale area between fully as wide as either dark area; pale costal area between origin of Rs and tip of Sc_1 reduced in size. Venation: Rs relatively short, angulated at origin; m present (in types).

Abdomen dark brown. Male hypopygium (Plate 2, fig. 29) much as in *hyperborea*; setæ at apex of the long slender arm of basistyle, *b*, short and inconspicuous. Interbase, *i*, broad basally, the outer half or less suddenly narrowed.

Habitat.—Japan (Hokkaido).

Holotype, a broken male Sôunkyô, June 4, 1932 (S. Issiki). Paratopotype, a broken male.

Pedicia (Nasiternella) hokkaidensis is allied to but obviously distinct from the Nearctic *P. (N.) hyperborea* (Osten Sacken),

differing in the characters listed above. I am not in possession of a specimen of *P. (N.) variinervis* (Zetterstedt), type of the subgenus, and know the species only from Wahlgren's notes and figures of the Zetterstedt types.⁴ There are a few important distinctions shown in the figures that apparently do not enter into the general plasticity of venation of the species; that is, the arcuate Rs, long and conspicuous basal section of R_{4+5} , and proportionately short second section of the latter vein. In the light of the evident distinctness of *hyperborea*, I believe the male hypopygium of the present species and *variinervis* will likewise show differences when the latter becomes available for comparison. In 1933, it was first detected that *hyperborea* had a subapterous female and it seems certain that the two Palæartic species above discussed will be found likewise to agree in this respect.

DICRANOTA (RHAPHIDOLABIS) PLATYMERA sp. nov. Plate 1, fig. 8; Plate 2, fig. 30.

General coloration gray, the præscutum with three darker grayish brown stripes; antennæ 12-segmented, black throughout; legs pale, the femoral tips darker; wings milky white, the stigma scarcely indicated; cell R_3 sessile; abdomen brown, the hypopygium a little brighter; male hypopygium with the lateral tergal arms appearing as acute spines, the median area convex; interbase flattened, the apex an acute spine.

Male.—Length, about 4.5 to 5 millimeters; wing, 6 to 6.5.

Rostrum and palpi brown. Antennæ black throughout, 12-segmented; flagellar segments oval, the terminal segment more elongate. Head dark gray.

Mesonotum gray, the præscutum with three darker grayish brown stripes. Pleura chiefly pale. Halteres pale, the knobs weakly darkened. Legs with the coxæ and trochanters pale; femora yellow, the tips passing into pale brown; tibiæ and tarsi pale yellowish brown, the terminal segments of the latter darkened. Wings (Plate 1, fig. 8) milky white; stigma not or scarcely indicated; veins pale brown. Venation: Rs arcuated; cell R_3 sessile; R_{1+2} short to punctiform; cell M_2 open.

Abdomen dark brown, the hypopygium brighter. Male hypopygium (Plate 2, fig. 30) with the median region of tergite, $9t$, broadly convex; lateral arms appearing as acute simple spines. Interbasal process, i , flattened, the outer margin microscopically serrulate, the apex directed laterad into an acute spine.

⁴ Arkiv för Zoologi 2 No. 7 (1904) 4, figs. 1-3.

Apices of basistyle, *b*, and outer dististyle, *od*, with microscopic spines.

Habitat.—Japan (Honshiu).

Holotype, male, Yumoto, Shimotsuke, altitude 4,850 feet, June 20, 1932 (*S. Issiki*). Paratopotype, a fragmentary male.

The only near regional ally so far described is *Dicranota (Rhaphidolabis) spina* Alexander (Honshiu, Hokkaido), which is well-distinguished by hypopygial characters, notably the shape of the interbasal process.

HEXATOMINI

PSEUDOLIMNOPHILA MOBILIS sp. nov. Plate 1, fig. 9; Plate 2, fig. 31.

General coloration of thorax dark gray, the dorsopleural region buffy; middle and posterior coxæ chiefly pale; posterior femora obscure yellow, the tips narrowly darkened; wings tinged with yellow; small, pale brown clouds at origin of *Rs*, along cord, outer end of cell 1st *M*₂, and in axillary region; *R*₂ lacking or very poorly indicated; abdomen dark brown, the caudal borders of the intermediate segments pale.

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

Rostrum gray; palpi black. Antennæ brownish black throughout; flagellar segments long-oval. Head light gray.

Thorax dark, blackish gray, the præscutum without stripes; dorsopleural region more buffy. Halteres pale yellow. Legs with the fore coxæ darkened, the other coxæ chiefly pale; trochanters yellow; femora obscure yellow, the tips narrowly darkened (only posterior legs remaining); tibiæ light brown, the tips narrowly blackened; tarsi black. Wings (Plate 1, fig. 9) tinged with yellow, the prearcular and costal regions clearer yellow; stigma elongate-oval, brown; small and ill-delimited pale brown clouds at origin of *Rs*, cord and outer end of cell 1st *M*₂; axillary region narrowly darkened; veins brown, the prearcular field light yellow. Venation: Both *Sc*₁ and *Sc*₂ ending before level of fork of *Rs*; *R*₂ lacking or so faintly indicated as to be scarcely visible, approximately in the position indicated in figure; region of stigma with no interruption of the microtrichia in this field; *m-cu* at midlength of cell 1st *M*₂.

Abdomen dark brown, the caudal borders of the intermediate segments narrowly pale; ninth segment dark. Male hypopygium (Plate 2, fig. 31) with the notch of the tergite, *9t*, relatively shallow. Basistyle, *b*, simple. Outer dististyle, *od*, with the apical spine moderately blackened. Interbase, *i*, bispinous, as figured.

Habitat.—Japan (Hokkaido).

Holotype, male, Sôunkyô, June 4, 1932 (*S. Issiki*).

Pseudolimnophila mobilis is most closely allied to *P. horii* Alexander in the dark gray color of the thorax and general coloration of the wings. The slightly patterned wings, with the details of venation distinct, together with the structure of the hypopygium, especially the basistyle and interbase, should readily separate the present fly from other similar species.

PSEUDOLIMNOPHILA YUMOTANA sp. nov. Plate 1, fig. 10; Plate 2, fig. 32.

Male.—Length, about 8 millimeters; wing, 9.5.

Closely allied to *Pseudolimnophila horii* Alexander, differing especially in the conspicuously patterned wings and slight differences in the male hypopygium.

Mesonotum gray, the præscutum with three nearly confluent dark brown stripes. Pleura dark gray. Wings (Plate 1, fig. 10) with a grayish yellow tinge, patterned with brown, including the stigma, seams at origin of Rs, cord, outer end of cell 1st M_2 , Cu, and in axillary region, the cubital darkening being especially conspicuous. Venation: Sc_1 ending opposite fork of Rs Sc_2 at its tip; R_2 slightly longer than R_{1+2} ; distinct; R_3 strongly sinuous; m-cu erect, just beyond midlength of cell 1st M_2 .

Male hypopygium (Plate 2, fig. 32) with the notch of the tergite, 9t, U-shaped, unusually deep. Basistyle, *b*, with a triangular protuberance on mesal face near apex. Interbase, *i*, with the two spines lying parallel, the outer a little longer.

Habitat.—Japan (Honshiu).

Holotype, male, Yumoto, Shimotsuke, altitude 4,850 feet, June 20, 1932 (*S. Issiki*).

Pseudolimnophila horii has the wings unpatterned excepting for the stigma and a more or less evident darkening on the anterior cord.

PSEUDOLIMNOPHILA ERECTA sp. nov. Plate 1, fig. 11.

General coloration gray, the præscutum with four darker brownish gray stripes, the intermediate pair separated by a narrow line of the ground color; wings strongly tinged with yellow, sparsely patterned with brown; Sc short, Sc_1 ending before fork of Rs; R_{2+3+4} short and suberect, subequal in length to m-cu.

Female.—Length, about 8 to 9 millimeters; wing, 8 to 9.

Rostrum gray; palpi black. Antennæ black; flagellar segments elongate, fusiform. Head dark gray.

Mesonotum dark gray, with four narrow darker brownish gray stripes, the intermediate pair separated by a line of the ground color about equal in width to the stripes themselves. Pleura gray, the dorsopleural region chiefly darkened. Halteres yellow. Legs with the coxæ entirely clear gray (holotype) or with the tips yellow, on posterior legs including most of coxæ (paratype); trochanters yellow; femora and tibiæ obscure yellow, the tips passing into dark brown; tarsi light brown, the outer segments darker. Wings (Plate 1, fig. 11) strongly tinged with yellow, especially in the type, the prearcular and costal regions more conspicuously luteous; stigma and a cloud on anterior cord darkened; in holotype, a dark cloud at origin of R_s ; in paratype, vein Cu evidently seamed with pale brown; veins pale, more yellowish in the luteous areas. Venation: Sc short, Sc_1 ending before fork of R_s , Sc_2 at its tip; R_2 and R_{1+2} distinct and subequal in length; R_{2+3+4} unusually short and sub-erect in position, subequal to $m-cu$; R_3 not conspicuously arched on basal half; basal section of R_{4+5} short to very short; petiole of cell M_1 subequal to or a little longer than $m-cu$, the latter at near two-thirds the length of cell 1st M_2 .

Abdomen dark brown; shield of ovipositor brownish black; valves horn yellow, cerci relatively short.

Habitat.—Japan (Honshiu).

Holotype, female, Lake Chuzenji (Tzujenji), Shimotsuke, altitude 4,100 feet, June 22, 1932 (*S. Issiki*). Paratype, female, Konseitoge, Shimotsuke, altitude 5,200 to 6,500 feet, June 21, 1932 (*S. Issiki*).

In the gray coloration of the thorax, *Pseudolimnophila erecta* is most generally similar to *P. horii* Alexander and *P. yumotana* sp. nov., being separated by the presence of four præscutal stripes and by the venation, especially the short, elevated R_{2+3+4} .

LIMNOPHILA (PRIONOLABIS) SÔUNKYANA sp. nov. Plate 1, fig. 12; Plate 2, fig. 33.

General coloration black, the thorax subopaque to opaque by a gray pruinosity; male hypopygium with the notch of tergite evenly and shallowly rounded; both dististyles short, the inner only a little less than the outer.

Male.—Length, about 9 to 9.5 millimeters; wing, 10.5 to 11.

Female.—Length, about 9 millimeters; wing, 8.5 to 9.

Rostrum, palpi, and antennæ black, the latter 16-segmented in both sexes; basal segments with outer faces protuberant; outer segments passing into oval. Head dull black, sparsely gray pruinose.

Mesonotum black, the surface subopaque by a sparse pruinosity. Pleura somewhat more heavily pruinose. Halteres pale yellow. Legs with the coxæ and trochanters black; femora yellow, the tips blackened, most extensively so on forelegs where the outer three-fourths is included, more narrowly on the posterior legs where the outer fourth is darkened. Wings (Plate 1, fig. 12) with the stigma small and relatively inconspicuous; dark seams of wing extensive but pale and diffuse; venation of medial field variable, especially of cells near the cord.

Abdomen, including hypopygium, black. Male hypopygium (Plate 2, fig. 33) with the notch of tergite, 9t, evenly rounded. Both dististyles (*od*, *id*) small and heavily blackened, the outer only a little longer than the inner.

Habitat.—Japan (Hokkaido).

Holotype, male, Sôunkyô, June 4, 1932 (*S. Issiki*). Allotopotype, female. Paratopotypes, 1 male, 1 female.

Limnophila (*Prionolabis*) *sôunkyana* is most closely allied to *L. (P.) neomunda* Alexander, likewise from Hokkaido, differing in the much larger size and details of structure of the hypopygium, especially of the dististyles. Of the fourteen Japanese and Formosan species of *Prionolabis* so far discovered, these two are most similar in the structure of the male hypopygium, but certainly appear to represent entirely distinct species.

LIMNOPHILA (PRIONOLABIS) LUTEIBASALIS sp. nov. Plate 1, fig. 13; Plate 3, fig. 34.

General coloration polished black; antennæ 13-segmented in both sexes; wings (female) reduced, light yellow on basal third, the remainder darker; wings (male) fully developed; cells R_3 and M_1 present; male hypopygium with caudal margin of tergite weakly trilobed.

Male.—Length, about 8 millimeters; wing, 9.

Female.—Length, about 7 millimeters; wing, 2.

Female.—Rostrum and palpi black. Antennæ black throughout, 13-segmented; flagellar segments oval, with verticils that exceed the segments; terminal segment elongate and evidently a fusion of segments, about one-half longer than the eighth flagellar segment; penultimate segment not clearly cut off from terminal segment, smaller than the antepenultimate. Head black, very sparsely pruinose; anterior vertex wide, the eyes correspondingly small.

Thoracic dorsum black, polished; pleura somewhat more pruinose. Halteres small, not exceeding one-half the length of

wings, dusky at base, the knobs clear yellow. Legs stout and hairy, brownish yellow, the femoral tips broadly blackened, somewhat more extensively so on forelegs; tibiae yellowish brown, the tips darker; tarsi black. Wings reduced, stenopterous; basal third clear light yellow, the remainder suffused with dark brown, chiefly produced by the veins and adjoining membrane. Macrotrichia present on veins C and R, and as sparse groups on veins beyond cord. Venation distorted but showing Rs elongate; cell R_3 present and deep; cell M_1 present, small.

Abdomen black; ovipositor with valves unusually long and powerful, horn yellow, the cerci nearly straight with the tips gently upcurved.

Male.—Characters as in female, differing especially in the fully winged condition. Antennae as in female, some of the intermediate segments showing traces of fusion. Halteres normally developed, pale, the knobs light yellow. Legs long and slender; fore femora with more than outer half blackened; hind femora with only the tips narrowly darkened. Wings (Plate 1, fig. 13) yellow, the prearcular and costal regions clearer yellow; stigma oval, brown; dark pattern on disk greatly reduced or lacking. Male hypopygium (Plate 3, fig. 34) with the central portion of tergite, $9t$, produced, its margin weakly trilobed. Inner dististyle, *id*, with two long slender spines that are closely appressed to the apical point.

Habitat.—Japan (Honshiu).

Holotype, female, Konseitoge, Shimotsuke, altitude 5,200 to 6,500 feet, June 21, 1932 (*S. Issiki*). Allotopotype, female. Paratopotypes, 2 broken females.

The only other species with reduced wings in the female sex is *Limnophila (Prionolabis) imanishii* Alexander (Japanese Alps), which has antennae of similar segmentation and structure. The present fly has the wings of the female proportionately longer, broader at base, and with the conspicuous coloration above described. In *imanishii* the wings are yellowish brown throughout. The male sex appears to be correctly associated with its female. The reduced number of antennal segments in both sexes readily separates the present fly from all allies, including *L. (P.) odai* Alexander, the male hypopygium of which has a very similar ninth tergite.

LIMNOPHILA (PRIONOLABIS) INERMIS sp. nov. Plate 1, fig. 14; Plate 3, fig. 35.

Belongs to the *lipophleps* group; general coloration black; male hypopygium with the outer dististyle simple; gonapophysis narrowed to an acute apical point, before tip on outer margin with a crest of about five or six small subappressed spinules; on inner margin at about three-fourths the length with a single long acute spine.

Male.—Length, about 4 millimeters; wing, 5.5.

Female.—Length, about 4.5 millimeters; wing, 5 to 5.5.

Rostrum and palpi black. Antennæ black throughout; flagellar segments short-oval. Head black.

Pronotum and mesonotum black, the surface subnitidous. Pleura black, subopaque. Halteres broken. Legs with coxæ and trochanters black; remainder of legs brownish black to black, the femoral bases narrowly obscure yellow, a trifle more extensive on the posterior legs; legs relatively long and slender in both sexes. Wings (Plate 1, fig. 14) with a faint brown tinge; stigma oval, pale brown; veins pale brown. Venation: Cell M_1 lacking, as in the group; m-cu about one-half its length beyond fork of M.

Abdomen, including hypopygium, black. Male hypopygium (Plate 3, fig. 35) with the outer dististyle, *od*, simple, gradually narrowed to an acute, gently curved black point; inner dististyle narrowed into a long slender apical point. Gonapophyses, *g*, as figured.

Habitat.—Japan (Honshiu).

Holotype, male, Lake Chuzenji (Tzujenji), Shimotsuke, altitude 4,100 feet, June 22, 1932 (*S. Issiki*). Allotopotype, female. Paratopotypes, 2 broken females.

Limnophila (*Prionolabis*) *inermis* is allied to the three other members of the *lipophleps* group occurring in the Japanese Empire, differing decisively in the structure of the male hypopygium, especially the unarmed outer dististyle and the conformation of the gonapophyses.

LIMNOPHILA (TRICHOLIMNOPHILA) PRIONOLABOIDES sp. nov. Plate 1, fig. 15; Plate 3, fig. 36.

General coloration of thorax gray, the præscutum with three polished black stripes; fore femora with outer half blackened; abdomen, including hypopygium, black; male hypopygium with median notch of tergite relatively narrow, the lateral lobes broad, more or less bilobed by the presence of a lateral flange.

Male.—Length, 6 to 6.5 millimeters; wing, 7 to 8.

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

Rostrum and palpi black. Antennæ (male) relatively long, if bent backward extending to mid-distance between the roots of the halteres and wings; scape brownish black; pedicel and flagellum brown, the outer flagellar segments passing into dark brown. Head light gray.

Pronotum dark gray. Mesonotal præscutum brownish gray, the usual three stripes highly polished, black, including the entire area of the stripe, not merely the cephalic portion, as in *pilifer*; scutum opaque brownish gray; scutellum clearer gray; mediotergite gray. Pleura dark gray. Halteres pale yellow. Legs with the fore coxæ darkened, the remaining coxæ yellow, a little infuscated at bases; trochanters yellow; femora yellow, the tips broadly blackened, most extensively so on the forelegs where fully the outer half is included; on middle and hind legs including about the outer fifth or sixth; tibiæ obscure yellow, the tips narrowly brownish black; basitarsi pale brown, the outer half and remainder of tarsi black. Wings (Plate 1, fig. 15) brownish yellow, the prearcular region clear light yellow; a restricted brown pattern, distributed as follows: Stigma, origin of Rs, cord, and outer end of cell 1st M₂; veins brown, yellow in the luteous prearcular region. Macrotrichia in outer ends of cells R₂ to M₄, inclusive. Venation: m-cu at or before mid-length of cell 1st M₂.

Abdominal tergites brownish black; sternites somewhat paler brown; hypopygium black. Male hypopygium (Plate 3, fig. 36) with the median region of tergite, 9t, somewhat produced, the lobes broad, each with a conspicuous lateral shoulder or flange; median notch relatively deep and narrow, the caudal end a little narrowed.

Habitat.—Japan (Honshiu).

Holotype, male, Yumoto, Shimotsuke, altitude 4,850 feet, June 20, 1932 (*S. Issiki*). Allotopotype, female. Paratopotypes, 3 males.

The nearest ally is undoubtedly *Limnophila* (*Tricholimnophila*) *pilifer* Alexander, which has the præscutal stripes pruinose excepting the cephalic ends of the intermediate pair, which are polished black. The latter species differs further in the reddish brown hypopygium, narrowly darkened fore femora, and the details of the hypopygium, as the very broad and relatively shallow tergal notch. The polished black præscutal stripes of the present fly produce a marked superficial resemblance to

certain small species of the subgenus *Prionolabis*, as *L. (P.) odai* Alexander.

ELEPHANTOMYIA (ELEPHANTOMYODES) MACKERRASI sp. nov. Plate 1, fig. 16.

Size large (wing, male, over 10 millimeters); mesothorax orange-yellow, immaculate; head brownish yellow; tarsi extensively snowy white; wings with a faint brown tinge; cells C and Sc dark brown; narrow but conspicuous brown seams at origin of Rs, along cord and outer end of cell 1st M₂; subterminal abdominal segments black.

Male.—Length, excluding rostrum, about 11 to 11.5 millimeters; wing, 10.8 to 11; rostrum, 6.5 to 6.7.

Rostrum black. Antennæ black, the basal portion of scape paler. Head obscure brownish yellow; anterior vertex at narrowest point about one-half wider than scape.

Mesonotum and pleura yellow or orange-yellow, immaculate. Halteres pale, the knobs dark brown. Legs with the coxæ yellow; trochanters yellowish testaceous; femora black, the bases restrictedly obscure yellow; tibiæ black; basitarsi black, the tips narrowly snowy white; segments two and three white, the remaining tarsal segments black. Wings (Plate 1, fig. 16) with a faint brownish tinge, patterned with dark brown, including all of cells C and Sc, stigma, and cell R₂ beyond it; relatively broad and conspicuous brown seams at origin and fork of Rs, along cord and outer end of cell 1st M₂; veins brownish black. Venation: Rs square at origin; m-cu nearly its own length beyond fork of M; cell 2d A of moderate length and width.

Basal abdominal tergites weakly bicolorous, obscure yellow basally, the outer one-half or more passing into dark brown; seventh and eighth segments uniformly blackened; hypopygium brownish black.

Habitat.—Java.

Holotype, male, Mount Malabar, altitude about 4,000 feet, May 26, 1929 (*I. M. Mackerras*). Paratopotype, male.

I take great pleasure in naming this conspicuous *Elephantomyia* after the collector, my friend Dr. Ian M. Mackerras. Compared with the thirteen other species of the subgenus *Elephantomyodes* described to date, the present fly is generally similar to *E. (E.) aurantia* (Brunetti), of British India, and *E. (E.) fuscomarginata* Enderlein, of Sumatra, by the combination of white tarsi and yellowish head. It differs from these and all other Malayan species with white tarsi in the conspicuously patterned wings. Members of the subgenus are now known

from as far east as New Britain and on the Australian mainland to northern New South Wales.

ERIOPTERINI

Genus *LECTERIA* Osten Sacken

Lecteria OSTEN SACKEN, Berliner Ent. Zeitschr. 31 (1887) 206.

Subgenus *NEOLECTERIA* novum

Characters as in typical *Lecteria*, differing only in the lack of cell M_1 of the wings.

Type of subgenus.—*Lecteria bipunctata* Edwards (Oriental Region: Borneo).⁵

As hitherto constituted, *Lecteria* includes besides the genotype, *armillaris* (Fabricius), of the Neotropics, about fifteen African species that have been discussed by the writer in another report.⁶ The Bornean fly differs from all other described members of the genus in the loss of cell M_1 of the wings, a character that appears to me to be of considerable importance in the hexatomoid Eriopterini.

Moreover, it is apparent that *Psaronius* Enderlein, with several species in the Neotropics, cannot be maintained as a genus separate from *Lecteria*, despite the presence of tibial spurs. All known species of *Psaronius* have cell M_1 present, as in typical *Lecteria*. These three subgeneric groups may be separated as follows:

1. Wings with cell M_1 present.
Wings with cell M_1 lacking (Oriental) *Neolecteria* subgen. nov.
2. Tibial spurs present (Neotropical) *Psaronius* Enderlein.
Tibial spurs lacking (Ethiopian, Neotropical) *Lecteria* Osten Sacken.

GONOMYIA (*GONOMYIA*) *OBSCURICLAVA* sp. nov. Plate 1, fig. 17.

Belongs to the *cognatella* group; general coloration of notum dark brown; pleura light brown, with a broad ventral whitish stripe; rostrum black; halteres pale, the knobs infuscated; legs brownish black; wings with a strong brown tinge; stigma and a seam along cord brownish; m-cu shortly beyond fork of M; caudal margins of abdominal segments pale.

Female.—Length, about 3.5 millimeters; wings, 4.2.

Rostrum and palpi black. Antennæ with the scape reddish brown; pedicel blackish; first flagellar segment pale, remainder

⁵ Sarawak Mus. Journ. 3 (1926) 265-266, pl. 9, fig. 10.

⁶ Revue Zoologique Africaine 11 (1923) 375-381.

of flagellum black; antennæ (female) relatively long for a member of this genus; flagellar segments subcylindrical. Head with vertex pale.

Mesonotum dark brown, the anterior lateral pretergites white; posterior border of scutellum somewhat paler, obscure yellow. Pleura light brown, with a broad ventral whitish stripe, extending longitudinally from the fore coxæ to the base of the abdomen. Halteres pale, the knobs infuscated. Legs with the fore coxæ white, the remainder more yellowish testaceous; trochanters obscure yellow; remainder of legs brownish black. Wings (Plate 1, fig. 17) with a strong brown tinge, cells C and Sc somewhat clearer; stigma brown, oval, clearly defined; a distinct brownish suffusion along the cord; veins pale brown, darker along cord. Venation: Distance on costa between tips of R_{1+2} and R_3 equal to nearly two-thirds the total length of vein R_3 ; m-cu shortly beyond fork of M.

Abdomen dark brown, the caudal borders of the segments pale, a little more expanded at lateral angles of tergites.

Habitat.—Sumatra.

Holotype, female, Fort de Kock, altitude 3,000 feet, 1926 (*E. Jacobson*).

The only species of the *cognatella* group so far described from eastern Asia are *Gonomyia* (*Gonomyia*) *aperta* Brunetti (British India) and *G. (G.) subcognatella* Alexander (western China). The present fly differs most evidently in the combination of darkened knobs of halteres, the faint but distinct brown seam along cord of wings, the brownish black legs, and other characters.

GONOMYIA (LIPOPHLEPS) JACOBSONIANA sp. nov. Plate 1, fig. 18; Plate 3, fig. 37.

General coloration of thoracic notum dark brown, the posterior border of scutellum broadly pale yellow; pleura black, with a narrow white longitudinal stripe; femora brownish yellow, fore and middle femora with conspicuous black tips, posterior femora with a subterminal black ring; bases of all tibiæ narrowly blackened; veins almost uniformly grayish subhyaline; stigma very pale; Sc_1 ending immediately before origin of R_s ; caudal borders of abdominal tergites (male) pale; male hypopygium with three dististyles, all simple.

Male.—Length, about 2.8 to 3 millimeters; wing, 3.5 to 3.7.

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

Rostrum and palpi black. Antennæ black, the basal two segments restrictedly yellow beneath; flagellar verticils (male) very long. Head chiefly white, the center of the posterior vertex darkened.

Anterior lateral pretergites restrictedly china-white. Mesonotal præscutum almost uniformly dark brown; pseudosutural foveæ black, conspicuous; posterior sclerites of notum brownish black, the posterior border of scutellum broadly pale yellow; mediotergite more or less pruinose. Pleura black, with a narrow white longitudinal line from base of fore coxæ across dorsal sternopleurite and dorsal meral region to base of abdomen; pteropleurite and cephalic portion of pleurotergite much paler, more orange-yellow. Halteres pale, the knobs dark brown, narrowly lined with whitish. Legs with the coxæ chiefly dark, excepting the fore coxæ, as described; trochanters obscure yellow; femora brownish yellow; fore and middle femora with broad and conspicuous apical black rings, the posterior femora with nearly as wide but distinctly subterminal rings; all tibiæ brownish yellow, the bases narrowly, the tips somewhat more broadly blackened; basitarsi brown basally, the tips and remaining tarsal segments black. Wings (Plate 1, fig. 18) relatively broad, almost uniformly grayish subhyaline; stigma very pale and scarcely indicated; costal region not variegated; veins pale brown, a little darker along cord. Venation: Sc_1 ending just before origin of R_s , Sc_2 at tip; basal section of R_5 elongate, about one-half r-m; m-cu shortly before fork of M.

Abdomen dark brown, in male the caudal borders of the tergites conspicuously china-white; sternites more uniformly darkened, paler medially but without pale apical bands; hypopygium yellowish brown. In female, tergites more uniformly darkened or with the pale caudal borders restricted. Male hypopygium (Plate 3, fig. 37) with three dististyles, all simple rods; innermost style, *id*, jointed at base and here with a group of four or five strong setæ, at near three-fourths the length of style with a further group of about four conspicuous setæ; intermediate style unusually slender but nearly equal in length to the outer; outer style, *od*, broad basally, the inner margin of outer third with a flange.

Habitat.—Sumatra, Mindanao.

Holotype, male, Fort de Kock, Sumatra, altitude 3,000 feet, 1926 (*E. Jacobson*). Allotopotype, female. Paratopotypes, 8 of both sexes; paratypes, several of both sexes, Madaum River,

Tagum, Davao district, Mindanao, at trap lantern, March 26 to 27, 1931 (*C. F. Clagg*).

I take unusual pleasure in naming this interesting *Gonomyia* after my old friend Mr. Edward Jacobson, distinguished student of the animal life of the Dutch East Indian islands. By Edwards's key to the Malayan species of *Lipophleps*⁷ the present fly runs to *Gonomyia (Lipophleps) diffusa* (de Meijere), a species that is quite distinct in the pale brown subterminal rings on femora and the somewhat patterned, slightly infumed wings. I have not yet seen a male that can be definitely assigned to *diffusa*, which was described only from females. The present fly is amply distinct from all species of the subgenus so far described from Formosa and the Philippines.

GONOMYIA (LIPOPHLEPS) ACUSPINOSA sp. nov. Plate 3, fig. 38.

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

Generally similar and closely allied to *G. (L.) jacobsoniana* sp. nov., differing in slight details of coloration and notable differences in the structure of the male hypopygium.

Antennæ dark throughout. Femora darker, the blackened tips on all legs terminal, preceded by a narrow, clearer yellow ring. Abdominal tergites uniformly darkened. Male hypopygium (Plate 3, fig. 38) with three dististyles; inner style, *id*, shortest, terminating in two acute spines, the outermost from a long basal tubercle that extends about to the level of the tip of inner spine, the actual spine short; inner spine long and slender, appressed to the outer one; mesal face of style at base, with a group of about nine or ten setæ surrounding a larger, more fasciculate one. Intermediate style, *md*, subequal in length to the outer, with almost the entire inner edge provided with a dense fringe of coarse appressed setulæ, these more protuberant and evident near base and at apex of style. Outer style, *od*, a simple, gently arcuated rod, shaped more or less like a slender boomerang. Phallosome, *p*, with the divergent arms terminating in acute blackened points, before tip a little expanded and microscopically setulose.

Habitat.—Sumatra.

Holotype, male, Fort de Kock, altitude 3,000 feet, 1926 (*E. Jacobson*).

A third species of the group is *Gonomyia (Lipophleps) alboannulata* Alexander (Philippines), which differs from the present

⁷ Journ. Fed. Malay States Mus. 14 (1928) 104–105.

fly in the structure of the two inner styles of the male hypopygium, the innermost being trispinous, the middle style with the setulæ confined to the somewhat enlarged distal half or less.

ERIOPTERA (TELENEURA) PERORNATA sp. nov. Plate 1, fig. 19; Plate 3, fig. 39.

General coloration of head, pronotum, and mesonotum pale brownish yellow, the thoracic pleura chiefly darkened; legs yellow, the femora with vague indications of a narrow, slightly darker subterminal ring; wings yellowish cream color, with a heavy pattern of brown spots and clouds; Sc₂ opposite two-thirds Rs; male hypopygium with a single dististyle; gonapophyses and ædeagus powerfully developed.

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

Rostrum and palpi black. Antennæ with basal segments black, the flagellum brownish black, with slender segments and conspicuous verticils. Head brownish yellow.

Pronotum and mesonotum light brownish yellow, the mediotergite blackened; a narrow lateral dark line on præscutum, extending from behind the pseudosutural foveæ to beyond the wing root. Pleura more or less distinctly striped longitudinally with dark brown and obscure brownish yellow, the latter color including the dorsopleural region and a more ventral stripe ending at the halteres. Halteres pale, the knobs weakly darkened. Legs with the coxæ dark; trochanters brown, their apices paler; remainder of legs pale yellow, the femora with vague indications of a narrow, scarcely darker, subterminal ring (only the forelegs remain). Wings (Plate 1, fig. 19) yellowish cream color, handsomely variegated by dark brown spots and clouds, including areas at h, origin of Rs, Sc₂, tip of Sc₁, cord, stigmal region, a nearly continuous band along vein R₅; a cloud at fork of M₃₊₄; marginal clouds at ends of all longitudinal veins excepting R₅; conspicuous paler brown clouds in bases of cells M to 2d A, in the latter cells including all but the outer ends and a narrow white seam the entire length of vein 1st A; veins yellow, darker in the clouded areas. Venation: Sc₂ ending opposite two-thirds the length of Rs; vein 2d A rather strongly sinuous.

Abdomen brownish black, the hypopygium more yellowish. Male hypopygium (Plate 3, fig. 39) with the tergite, 9t, at apex produced into two lateral fleshy lobes provided with long coarse setæ. Basistyle, b, with a single developed dististyle, this appearing as a strongly curved horn-colored hook, narrowed to the slightly dusky tip that terminates in a small seta. Phallo-

some, *p*, conspicuous, the apparent gonapophyses appearing as long flattened blades that are longer than the dististyle; the ædeagus is a compressed blade, on margin with a long slender extension whose limits cannot be accurately determined in the unique type.

Habitat.—China (Szechwan).

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

The most similar described species is *Erioptera (Teleneura) nigribasis* Edwards (Malayan Subregion), which is readily distinguished by the coloration of the legs, especially the blackened femoral bases; the wing pattern, with the details quite different from the present fly, although the general plan is the same; and especially the structure of the male hypopygium, which in *nigribasis* has two dististyles and the phallosome of entirely different construction. A careful examination of the unique type of the present species has failed to reveal any trace of the outer dististyle, or of its former position if lost by breakage.

ERIOPTERA (ERIOPTERA) FUSCOHALTERATA Alexander.

Erioptera fuscohalterata ALEXANDER, Proc. U. S. Nat. Mus. 68 art. 4 (1925) 11-12, fig. 3.

Described from a single broken male, Amagu Village, Ussuri, July, 1923 (*Cockerell*). An additional male in the Russian Academy of Sciences, taken at Nikolajevsk, on Amur River, Ussuri, June 23, 1914 (*Bjelousov*).

The species is allied to the European *Erioptera (Erioptera) fuscipennis* Meigen or *E. (E.) lutea* Meigen, but is quite distinct in the structure of the male hypopygium, especially the slender, gradually narrowed, outer dististyles.

ORMOSIA RECTANGULARIS sp. nov. Plate 1, fig. 20; Plate 3, fig. 40.

General coloration light gray; antennæ short; halteres pale yellow; wings pale yellowish white, the prearcular and costal regions clear light yellow; a restricted brown pattern on wings; R_2 at fork of R_3 and R_4 ; *m* rectangular and spurred at union with outer section of M_3 ; anal veins divergent; male hypopygium without a spinous apical spur on basistyle; gonapophyses appearing as long yellow rods, their bases dilated.

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

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

Rostrum and palpi dark brown. Antennæ short; basal segments pale brown, the flagellum darker brown; flagellar segments oval, decreasing in size outwardly. Head gray.

Mesonotum light gray, the præscutum without clearly indicated stripes; pseudosutural foveæ and tuberculate pits black. Pleura clear gray throughout. Halteres pale yellow. Legs with the coxæ pale, sparsely pruinose, especially the fore coxæ; trochanters yellow; femora obscure yellow, the tips conspicuously brownish black; tibiæ light brown, the tips darker; tarsi brownish black. Wings (Plate 1, fig. 20) pale yellowish white, the prearcular and costal regions clearer yellow; a restricted brown pattern, including the stigma, seams along cord, m, and vein Cu; poorly indicated markings at ends of outer radial veins and in axillary region; veins brown, darker in the clouded areas, pale yellow in the luteous regions. Venation: R_2 at fork of R_{3+4} ; veins R_3 and R_4 deflected cephalad at margin, the former more strongly so; cell 1st M_2 open, m rectangular and spurred at union with outer section of M_3 ; anal veins diverging.

Abdomen, including hypopygium, dark brown. Male hypopygium (Plate 3, fig. 40) with the basistyle, *b*, not produced at apex. Dististyles small, the inner, *id*, broad, narrowed into an apical point. Gonapophyses, *g*, appearing as long straight yellow rods, their bases dilated.

Habitat.—Japan (Honshiu).

Holotype, male, Yumoto, Shimotsuke, altitude 4,850 feet, June 20, 1932 (*S. Issiki*). Allotopotype, a broken female.

In the venation of the outer radial and medial fields of the wing, the present fly agrees with a group of Japanese and Formosan species, such as *Ormosia aculeata* Alexander, *O. anthracopoda* Alexander, *O. horiana* Alexander, and *O. laevistyla* Alexander, all of which differ in the apically convergent anal veins and in the terminal spine of the basistyle of the male hypopygium.

MOLOPHILUS TRIACANTHUS sp. nov. Plate 1, fig. 21; Plate 3, fig. 41.

Belongs to the *gracilis* group and subgroup; general coloration brownish gray, the humeral region of præscutum obscure yellow; halteres yellow; wings broad; male hypopygium without spinous lobes on basistyle; both dististyles simple, the outer one on distal half with a fringe of conspicuous black setæ; phallosome with three slender black spines.

Male.—Length, about 4 to 4.2 millimeters; wing, 5.3 to 5.5.

Rostrum and palpi brown. Antennæ relatively short, dark brown throughout. Head gray.

Anterior lateral pretergites pale yellow. Mesonotal præscutum and scutum dark grayish brown, the humeral region ob-

scure yellow; pseudosutural foveæ elongate, conspicuous; posterior border of scutellum obscure yellow; mediotergite dark gray. Pleura brownish gray. Halteres pale. Legs with coxæ and trochanters yellow; femora brownish black, the bases pale, more extensively so on posterior legs; tibiæ pale brown, the tips narrowly darker; tarsi brownish black. Wings (Plate 1, fig. 21) broad, faintly tinged with brown, the basal portions more yellowish; veins very pale brown, the prearcular and subcostal veins more yellow; macrotrichia brown, the costal fringe long and dense. Venation: Vein 2d A ending about opposite one-third the length of the petiole of cell M_3 .

Abdomen brownish gray, the hypopygium somewhat more brightened. Male hypopygium (Plate 3, fig. 41) with the apical lobes of the basistyle all short and blunt, the mesal lobe small and darkened. Outer dististyle, *od*, a simple arcuated rod, the inner margin on distal half densely fringed with long black setæ. Inner dististyle, *id*, subequal in length to outer, the basal two-thirds flattened, the outer third narrowed and curved into an acute point, the surface with microscopic setulæ. Phallosome, *p*, with three slender, acute spines, one apical, the others lateral.

Habitat.—Japan (Honshiu).

Holotype, male, Yumoto, Shimotsuke, altitude 4,850 feet, June 20, 1932 (*S. Issiki*). Paratopotype, male.

Molophilus triacanthus is readily told from the other Japanese species by the large size, broad wings, and, especially, the structure of the male hypopygium. The trispinous phallosome is different from that of any other described species in eastern Asia.

MOLOPHILUS CRASSULUS sp. nov. Plate 1, fig. 22; Plate 3, fig. 42.

Belongs to the *gracilis* group and subgroup; general coloration brown; antennæ short; halteres darkened; wings with Sc_1 ending just beyond R_2 ; 2d A relatively short, ending opposite the caudal end of m-cu; male hypopygium with lobes of basistyle poorly developed; inner dististyle slender, at apex a little expanded into a slightly swollen bispinous head.

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

Rostrum pale; palpi dark brown. Antennæ short; basal segments obscure yellow; flagellar segments dark brown. Head brownish testaceous.

Mesonotum medium brown, without clearly defined markings, the humeral region of præscutum obscure yellow. Pleura chiefly darkened, the ventral portions paler. Halteres darkened. Legs

with the coxæ and trochanters yellow; remainder of legs brown, the outer tarsal segments darker. Wings (Plate 1, fig. 22) grayish yellow, the costal and prearcular regions clearer yellow; veins pale brown, the macrotrichia dark brown; costal fringe unusually long and dense. Venation: Sc_1 ending just beyond R_2 , the latter about in alignment with r-m; vein 2d A relatively short, ending opposite the caudal end of m-cu.

Abdomen dark brown, the hypopygium brighter. Male hypopygium (Plate 3, fig. 42) with the dorsal and mesal lobes of basistyle scarcely developed; ventral lobe, *vb*, produced as a broadly flattened extension that is divided into two parts by a linear slit. Outer dististyle, *od*, a flattened pale blade, the distal third narrowed into an acute black spine. Inner dististyle, *id*, nearly as long but slenderer and nearly straight, the head dilated and darkened, terminating in an apical point and with a small black marginal spur at the base of the head.

Habitat.—China (Szechwan).

Holotype, male, Mount Omei, altitude 4,800 feet, July 4, 1932 (*Franck*). Paratopotype, a broken male. Allotype, female, altitude 4,200 feet, June 29, 1932. Paratypes, 6 of both sexes, altitude 4,200 feet, June 29 to July 2, 1932; 4,800 feet, July 4, 1932.

There is no very near ally of the present fly among the described regional species. The structure of the male hypopygium is distinctive.

MOLOPHILUS BARDUS sp. nov. Plate 1, fig. 23; Plate 3, fig. 43.

Belongs to the *gracilis* group and subgroup; closely allied to *costalis*; male hypopygium with the dorsal lobe of basistyle pale, not tipped with a blackened spine; both dististyles long and slender, blackened to their bases.

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

Rostrum and palpi black. Antennæ with the basal segments pale, the outer segments darker. Head brownish yellow.

Mesonotum and pleura almost uniformly pale brown. Halteres pale. Legs with coxæ and trochanters pale; remainder of legs broken. Wings (Plate 1, fig. 23) with a grayish yellow tinge, the costal border clear light yellow; cells near wing base more darkened; veins pale, darker in the basal areas. Venation: R_2 and r-m about in transverse alignment.

Abdomen brown, the hypopygium brighter. Male hypopygium (Plate 3, fig. 43) much as in *costalis*, differing in the pale-tipped, more obtuse, dorsal lobe, *db*, of the basistyle and the slightly longer and slenderer, entirely blackened dististyles.

Outer dististyle, *od*, very long and slender, gradually narrowed into a long slender spine. Inner dististyle, *id*, a trifle shorter, broader on basal half, the outer half slenderer and sinuous, the outer margin with a few appressed teeth.

Habitat.—China (Szechwan).

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

Although closely allied to *Molophilus costalis* Edwards (Formosa), the present species is readily distinguishable by the details of the male hypopygium.

Genus TOXORHINA Loew

Toxorhina LOEW, Linnæa Entomol. 5 (1851) 400.

Subgenus EUTOXORHINA novum

Characters as in the typical subgenus, differing in the complete loss of vein and cell M_3 , there being only two radial and two medial veins reaching the wing margin.

Type of subgenus.—*Toxorhina (Eutoxorhina) simplex* sp. nov. (Australasian Region: Fiji).

The present group shows the greatest reduction in longitudinal veins of wing of any known crane fly, there being but eight reaching the margin (Sc_1 , R_{1+2} , R_5 , M_{1+2} , M_4 , Cu_1 , 1st A, and 2d A). Other groups of Tipulidæ that show a notable reduction in number of veins (as *Limonia: Alexandria* Garrett, *Orimarga: Diotrepha* Osten Sacken, and *Hexatoma: Cladolipes* Loew) have an additional branch of R preserved and so have nine longitudinal veins attaining the margin.

The three known subgenera of *Toxorhina* may be separated as follows:

1. Wings with two branches of Rs (R_3 and R_5) reaching the margin (tropicopolitan) *Ceratocheilus* Wesché.
 Wings with a single branch of Rs (R_5) reaching the margin..... 2.
2. Three medial veins (M_{1+2} , M_3 , M_4) reaching the margin (almost cosmopolitan) *Toxorhina* Loew.
 Two medial veins (M_{1+2} , M_4) reaching the margin (Australasian).
Eutoxorhina subgen. nov.

TOXORHINA (EUTOXORHINA) SIMPLEX sp. nov. Plate 1, fig. 24.

The unique type has lost the head and most of the abdomen.

Mesonotum chiefly reddish brown, the pleura blackened. Halteres pale yellow, the knobs weakly infuscated. Femora black, with a darker brown, nearly terminal ring, the extreme tips pale; remainder of legs brown. Wings (Plate 1, fig. 24) with a strong brownish tinge, cells Cu , 1st A, and 2d A somewhat paler; a

delicate pale streak in cell M, crossing m-cu into extreme base of cell M₄; a darker brown cloud on r-m and basal section of M₁₊₂ veins dark brown, more yellowish in the costal region. Basal abdominal tergites brown, the corresponding sternites blackened; abdomen broken beyond the second segment.

Habitat.—Fiji.

Holotype, sex?, Coli-i-Siva, June 20, 1924 (*E. H. Bryan, Jr.*). Type in Bishop Museum, Honolulu.

ILLUSTRATIONS

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

PLATE 1

- FIG. 1. *Limonia* (*Geranomyia*) *unifilosa* sp. nov.; venation.
2. *Limonia* (*Geranomyia*) *baliana* sp. nov.; venation.
3. *Limonia* (*Geranomyia*) *vanikorensis* sp. nov.; venation.
4. *Limonia* (*Pseudoglochina*) *bryophila* sp. nov.; venation.
5. *Orimarga* (*Orimarga*) *nudivena* sp. nov.; venation.
6. *Orimarga* (*Orimarga*) *æquivena* sp. nov.; venation.
7. *Pedicia* (*Nasiternella*) *hokkaidensis* sp. nov.; venation.
8. *Dicranota* (*Rhaphidolabis*) *platymera* sp. nov.; venation.
9. *Pseudolimnophila mobilis* sp. nov.; venation.
10. *Pseudolimnophila yumotana* sp. nov.; venation.
11. *Pseudolimnophila erecta* sp. nov.; venation.
12. *Limnophila* (*Prionolabis*) *sôunkyana* sp. nov.; venation.
13. *Limnophila* (*Prionolabis*) *luteibasalis* sp. nov.; venation.
14. *Limnophila* (*Prionolabis*) *inermis* sp. nov.; venation.
15. *Limnophila* (*Tricholimnophila*) *prionolaboides* sp. nov.; venation.
16. *Elephantomyia* (*Elephantomyodes*) *mackerrasi* sp. nov.; venation.
17. *Gonomyia* (*Gonomyia*) *obscuriclava* sp. nov.; venation.
18. *Gonomyia* (*Lipophleps*) *jacobsoniana* sp. nov.; venation.
19. *Erioptera* (*Teleneura*) *perornata* sp. nov.; venation.
20. *Ormosia rectangularis* sp. nov.; venation.
21. *Molophilus triacanthus* sp. nov.; venation.
22. *Molophilus crassulus* sp. nov.; venation.
23. *Molophilus bardus* sp. nov.; venation.
24. *Toxorhina* (*Eutoxorhina*) *simplex* sp. nov.; venation.

PLATE 2

- FIG. 25. *Limonia* (*Geranomyia*) *unifilosa* sp. nov.; male hypopygium.
26. *Limonia* (*Geranomyia*) *baliana* sp. nov.; male hypopygium.
27. *Limonia* (*Pseudoglochina*) *bryophila* sp. nov.; male hypopygium.
28. *Orimarga* (*Orimarga*) *nudivena* sp. nov.; male hypopygium.
29. *Pedicia* (*Nasiternella*) *hokkaidensis* sp. nov.; male hypopygium.
30. *Dicranota* (*Rhaphidolabis*) *platymera* sp. nov.; male hypopygium.
31. *Pseudolimnophila mobilis* sp. nov.; male hypopygium.
32. *Pseudolimnophila yumotana* sp. nov.; male hypopygium.
33. *Limnophila* (*Prionolabis*) *sôunkyana* sp. nov.; male hypopygium.

PLATE 3

- FIG. 34. *Limnophila (Prionolabis) luteibasalis* sp. nov.; male hypopygium.
35. *Limnophila (Prionolabis) inermis* sp. nov.; male hypopygium.
36. *Limnophila (Tricholimnophila) prionolaboides* sp. nov.; male hypopygium.
37. *Gonomyia (Lipophleps) jacobsoniana* sp. nov.; male hypopygium.
38. *Gonomyia (Lipophleps) acuspinosa* sp. nov.; male hypopygium.
39. *Erioptera (Teleneura) perornata* sp. nov.; male hypopygium.
40. *Ormosia rectangularis* sp. nov.; male hypopygium.
41. *Molophilus triacanthus* sp. nov.; male hypopygium.
42. *Molophilus crassulus* sp. nov.; male hypopygium.
43. *Molophilus bardus* sp. nov.; male hypopygium.

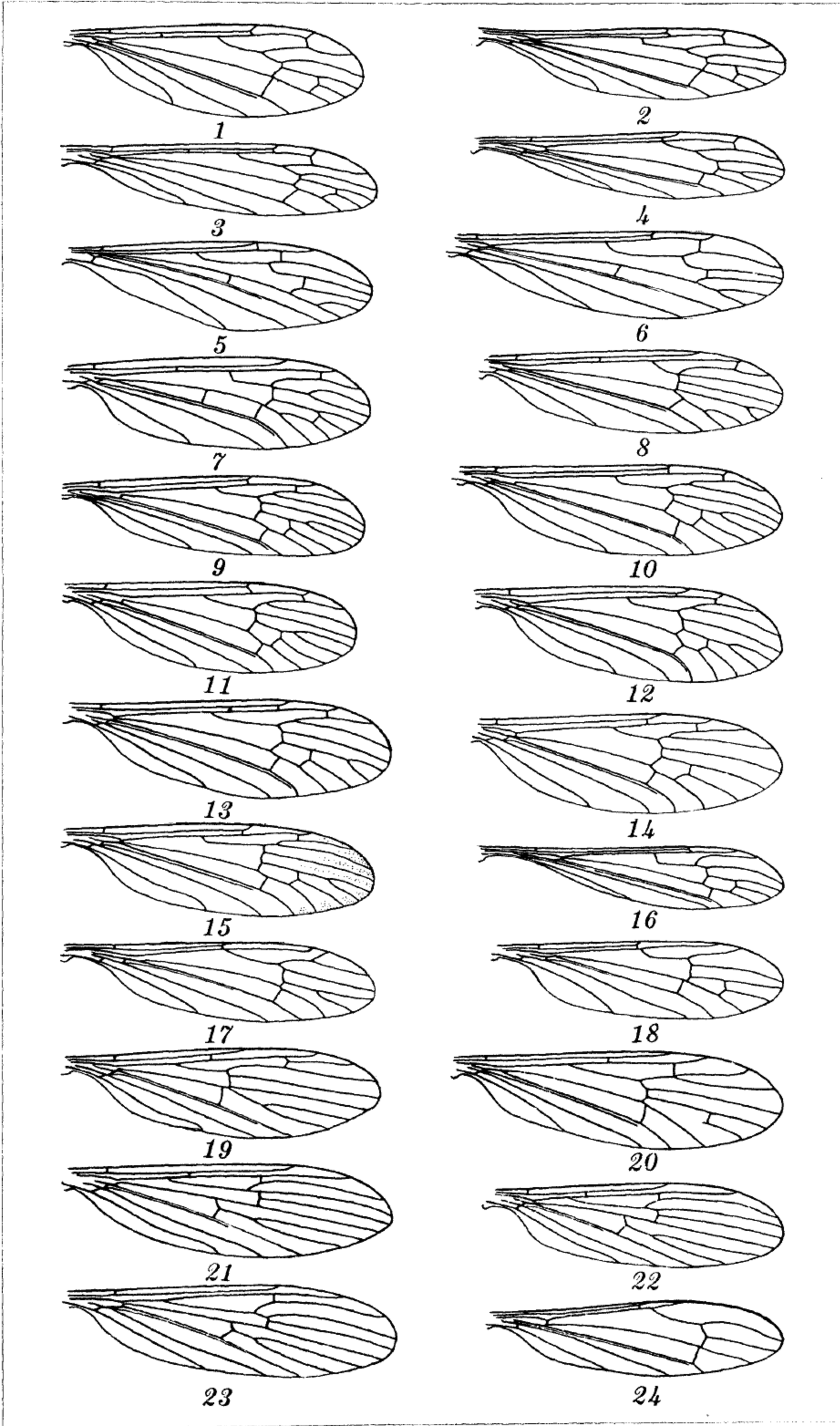


PLATE 1.

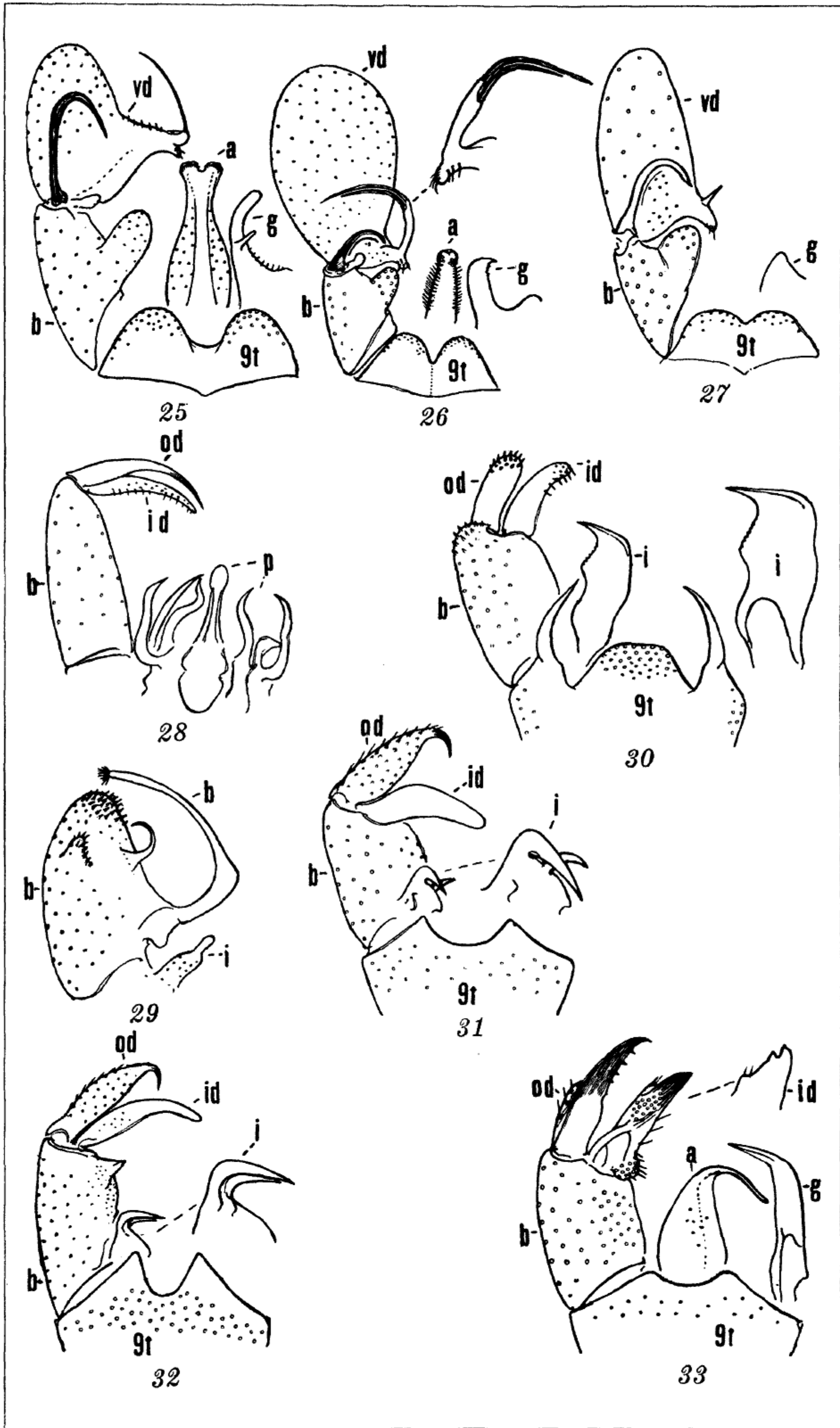


PLATE 2.

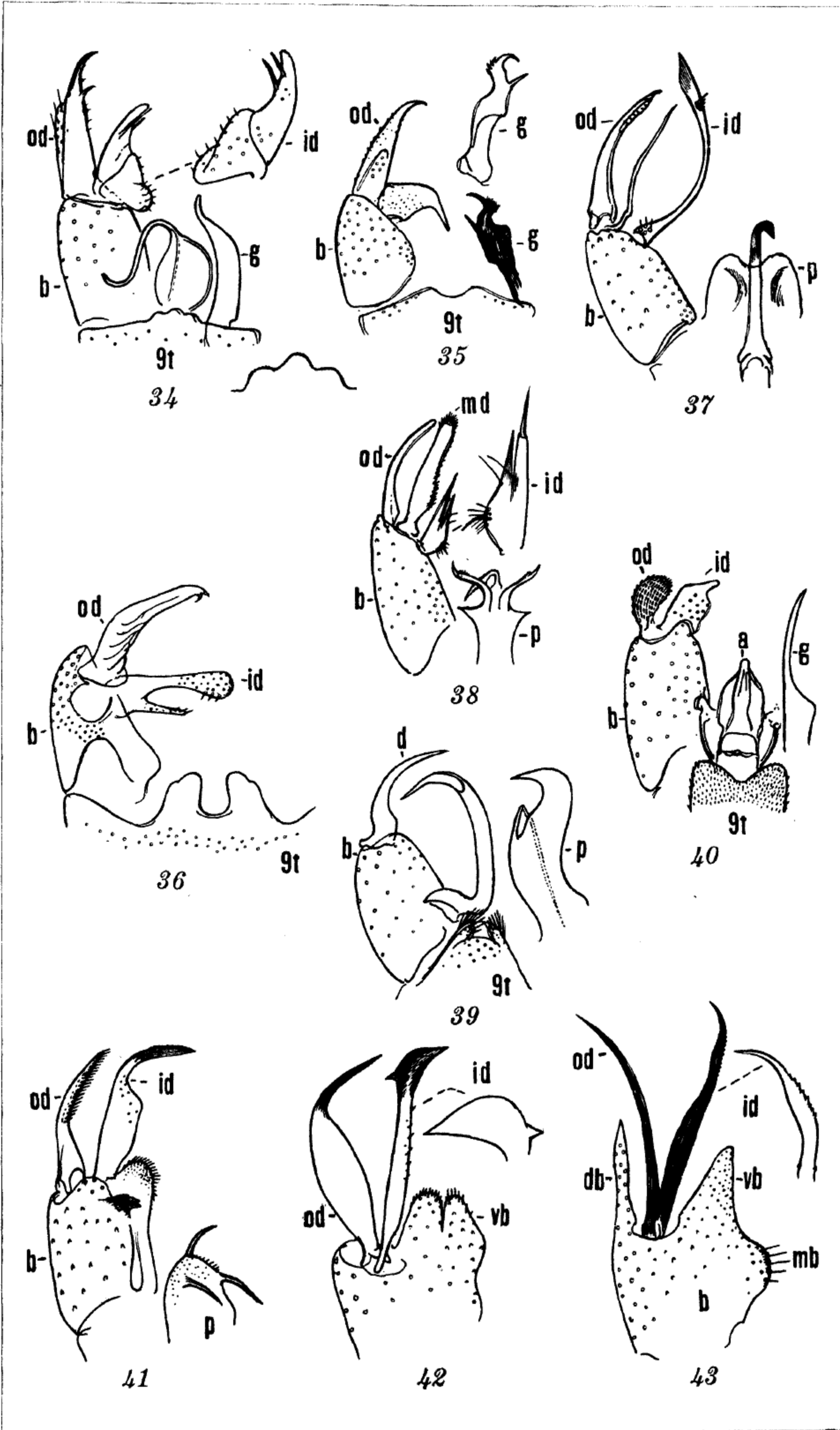


PLATE 3.