

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

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THREE PLATES

At this time I am continuing the consideration of the crane flies taken on the Third Archbold Expedition to New Guinea, covering especially the Snow Mountains in the former Netherlands New Guinea, now called West Irian or West Papua. A short account of this expedition, with a list of the seventeen collecting stations established by the entomologist, Dr. Lambertus Johannes Toxopeus, has been provided in another paper which may be consulted. [Alexander (1958) 657-658.] Other papers that consider the expedition and bear upon the Tipulidæ that were secured are provided in the references. (See references on page 417.)

As has been indicated in these earlier papers, the main series of specimens resulting from this expedition and taken by Dr. Toxopeus is preserved in the Government Museum of Natural History, Leiden, Netherlands, with duplicates where available being deposited in the collection of the American Museum of Natural History, New York, and in the author's collection. I am most deeply indebted to Director M. A. Lief-tinck, of the Leiden Museum, for the privilege of retaining the types of uniques in my personal collection.

LIMONIINÆ LIMONIINI

LIMONIA (LAOSA) PAVO sp. nov.

Plate 1, fig. 1.

Size small (wing of female 9 millimeters); general coloration of thorax obscure brownish yellow, darker behind; antennal flagellum orange; halteres pale yellow, apex of knob dark brown; wings subhyaline, strikingly patterned with pale brown and brownish black, the basal areas ocelliform; a broad complete crossband beyond cord; supernumerary crossveins in cells R_3 and R_5 .

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

Rostrum black; palpi dark brown. Antennæ with scape pale brown, pedicel and flagellum dull orange, the outer segments slightly darker; basal flagellar segments oval, with short verticils. Head light gray, posterior vertex with a narrow central brownish black line that narrows to a point in front; anterior vertex reduced to a narrow strip that is about equal in width to two rows of ommatidia.

Pronotum and cervical region yellowed, weakly darker above. Mesonotal præscutum obscure yellow, darker on sides behind the humeri; posterior sclerites of notum yellowish brown, the sides of scutal lobes darker. Propleura yellow, remainder of pleura darker brownish yellow. Halteres yellow, apical half of knob dark brown. Legs with coxæ and trochanters yellow, apex of latter narrowly blackened and with a microscopic spinous point; remainder of legs broken. Wings (Plate 1, fig. 1) with the ground subhyaline, strikingly patterned with very pale brown and brownish black; the paler areas include a complete band beyond cord, broadest in front between tips of veins Sc and R_{1+2} , narrowed behind at end of vein 1st A, narrowest over outer end of cell 1st M_2 , the band narrowly bordered by darker brown; other paler markings include ocelliform areas before cord, the most complete at origin of Rs with a more basal one semicircular in outline, both of these narrowly dark brown on outer part, bordered internally by a subequal white ring; still paler areas in outer radial field over the supernumerary crossveins, connected along vein R_{4+5} , with the central crossband and near end of vein 2nd A, with other marks at ends of veins R_3 , R_{1+5} , M_{1+2} , M_3 and M_4 , extended basad and expanded into the cells to form an oblique subterminal band; the darkest areas are restricted brownish black marks on anterior cord with a further large circular spot in cell R adjoining Rs; veins yellow, darker at the anterior cord. Venation: Sc_1 ending some distance beyond level of fork of Rs, Sc_2 near its tip; supernumerary crossveins in cells R_3 and R_5 ; m-cu at near midlength of M_{3+4} ; anal veins bent very strongly into the margin; cell 2nd A broad.

Abdominal tergites bicolored, dark brown, with pale yellow bases, outer segments uniformly darkened; basal sternites obscure yellow, the outer segments darker. Ovipositor with cerci slender, the tips acute.

Habitat.—West Papua.

Holotype, female, Sigi Camp, altitude 1,350 meters, February 20, 1939 (*Toxopeus*); Alexander Collection, through Dr. Lief-tinck.

Limonia (*Laosa*) *pavo* is readily told from all other regional members of the subgenus having two supernumerary crossveins in the wing by the striking and distinctive wing pattern. The most similar such species include *L. (L.) falcata* Alexander and *L. (L.) innuba* Alexander, readily distinguished by the coloration of the wings.

LIMONIA (LAOSA) SUFFALCATA sp. nov.

Plate 1, fig. 2.

Size large (wing of male 11 millimeters); mesonotum ashy gray, patterned with brown; femora light yellow, tips dark brown, tibiæ yellow, bases very narrowly darkened; wings barely subfalcate, subhyaline, patterned with brown, the major crossbands pale brown, narrowly bordered by darker brown; cell 2nd A broad.

Male.—Length, about 8 millimeters; wing, 11.

Rostrum brownish black; palpi black. Antennæ with scape brownish black, pedicel yellow; flagellum broken. Head dark brown, anterior vertex more pruinose, posteriorly reduced to a capillary strip or with eyes virtually contiguous.

Pronotum darkened. Mesonotal præscutum with the ground clear ashy gray, greatly restricted by a brown central stripe that extends laterad to the margin, limiting the ground to the humeral triangles and a broad area before suture; scutum chiefly dark brown, including the midregion; scutellum ashy gray, the center of disk medium brown; postnotum dark brown, the mediotergite with a pair or oval discal light gray spots. Pleura of type crushed, apparently variegated dark brown and light gray, the latter color chiefly on the ventral sternopleurite and posteriorly; dorsopleural membrane pale. Halteres light yellow, knob dark brown. Legs with coxæ medium brown, the middle pair more pruinose; trochanters obscure yellow; femora light yellow, tips dark brown; tibiæ yellow, bases very narrowly darkened; tarsi yellow, the three outer segments brownish black; claws with a major outer tooth and a more basal comblike row of about seven smaller teeth. Wings (Plate 1, fig. 2) subhyaline, patterned with brown, including a narrow band at near one-fourth the length, and a larger irregular area beyond midlength, both of these pale brown variegated with paler and narrowly margined with darker brown; basal band narrowed posteriorly.

ending at vein 2nd A; the complex outer band appears as a narrow seam over the cord, more or less confluent with a much broader one beyond, both bands connected in cell M_4 ; in outer radial field with still other darkened areas, confluent with one another and with the major band in cell R_5 ; small paler marks at ends of veins M_{1+2} , M_3 , M_4 and 1st A; in the region of the arculus with a restricted yellowed mark that is narrowly bordered by dark brown; veins yellow, the color persisting in the darkened areas and appearing conspicuous against this background. Wing tip weakly subfalcate. Venation: R_2 lying basad of free tip of Sc_2 ; supernumerary crossveins in cells R_3 and R_5 , the latter more basad; cell 1st M_2 relatively short, strongly widened outwardly, m-cu at near midlength of M_{3+4} ; vein 2nd A strongly arched, the cell broad.

Abdomen short, dark brown, the extreme posterior borders of the intermediate tergites yellow, broader on the intermediate sternites; hypopygium dark brown.

Habitat.—West Papua.

Holotype, male, Rattan Camp, altitude 1, 150 meters, February 13, 1939 (*Toxopeus*); Alexander Collection.

Limonia (Laosa) suffalcata is most similar to *L. (L.) falcata* Alexander, of New Britain and Northeast New Guinea, differing in the feebly falcate wings, details of venation, and lack of brown dots in the wing cells.

LIMONIA (LIBNOTES) INVICTA sp. nov.

Plate 1, fig. 3; Plate 2, fig. 21.

Size relatively large (wing 13 millimeters or more); mesonotal præscutum chestnut brown, scutal lobes dark brown; wings faintly tinged with brown, conspicuously patterned with darker brown; Sc very long, Sc_1 ending beyond level of r-m; m-cu at or beyond midlength of M_{3+4} ; male hypopygium with tergite broadly emarginate; ædeagus at apex produced into acute nearly hyaline points.

Male.—Length, about 9 to 10 millimeters; wing, 13 to 14.

Female.—Length, about 10 to 11 millimeters; wing, 13.5 to 14.

Rostum brownish black, mouthparts and palpi black. Antennæ with scape dark brown, remainder black; proximal flagellar segments short-oval, outer segments more elongate, terminal segment almost one-half longer than the penultimate. Head dark brown; anterior vertex narrow, less than the diameter of the scape.

Cervical sclerites and pronotum dark brown. Mesonotal præscutum chestnut brown to fulvous, the extreme cephalic border slightly darker; scutal lobes dark brown, central area and the scutellum testaceous yellow; postnotum obscure yellow. Anterior thoracic pleura dark brown, pleurotergite and posterior sclerites more yellowed. Halteres with stem yellow, apex of knob dark brown. Legs with coxæ and trochanters light yellow; femora dark brown, bases slightly darker; tibiæ and tarsi dark brown; claws of moderate length, with one major outer spine and three smaller more basal ones. Wings (Plate 1, fig. 3) faintly tinged with brown, patterned with darker brown, including the stigma and broad seams at origin of Rs, cord and outer end of cell 1st M_2 ; vague still paler clouds over outer veins, Cu and 2nd A; veins brown. Longitudinal veins beyond cord with macrotrichia, including also a few on Rs and distal ends of M, Cu_1 and the anals. Venation: Sc very long, Sc_1 ending slightly beyond the level of r-m, Sc_2 near its tip, faintly indicated; basal section of R_{4+5} short, in longitudinal alignment with Rs; cell 1st M_2 long, exceeding vein M_4 ; m-cu at or shortly beyond midlength of M_{3+4} .

Abdomen dark cinnamon brown, the outer segments, including hypopygium, brownish black. Ovipositor with cerci very slender, gently upcurved to the acute tips. Male hypopygium (Plate 2, fig. 21) with posterior border of tergite, *t*, broadly emarginate, the obtuse lobes with abundant long setæ. Ninth sternite narrowed outwardly, provided with long coarse setæ, those at base marginal, the outer ones slightly submarginal. Basistyle, *b*, with ventromesal lobe low and rounded. Dorsal dististyle a curved sickle, narrowed gradually to the acute tip; ventral style, *d*, with its area about one-half greater than that of the basistyle, setæ relatively short; rostral prolongation a compressed cleaverlike blade, on its face near base with a low blackened tubercle that bears a single rostral spine, with a much smaller normal bristle on its base. Gonapophysis, *g*, with mesal-apical lobe slender, the darkened tip slightly outcurved, lower margin before apex with a few low denticles. Ædeagus with each apical lobe produced into a nearly hyaline acute point (one-half shown in figure).

Habitat.—West Papua.

Holotype, male, Letterbox Camp, east of Mount Wilhelmina, 3,560 meters, September 12, 1938 (*Toxopeus*). Allotopotype, female, pinned with the type. Paratopotypes, males and fe-

males; paratypes, male and females, Scree Valley Camp, at foot of Mount Wilhelmina, 3,800 meters, September 14, 1938 (*Toxopeus*).

By Edwards's key to the Old World species of *Libnotes* (1928), *Limonia (Libnotes) invicta* runs to couplet 53, now known to include a large number of Oriental-Australasian species. It is well distinguished from these by its large size, venation, wing pattern, and details of hypopygial structure.

LIMONIA (LIBNOTES) TIBIOCINCTA sp. nov.

Plate 1, fig. 4.

Allied to *amatrix*; size large (wing of male over 11 millimeters); mesonotal præscutum silvery gray with two light brown intermediate stripes; pleura white, with a narrow dark brown dorsal stripe; halteres with stem light yellow, knob dark brown; legs black, bases of fore femora obscure yellow, all femora with a narrow white ring beyond midlength; tibiæ with a similar annulus a short distance beyond the base; wings whitened, a conspicuous brown pattern; abdomen yellow.

Male.—Length, about 9.5 millimeters; wing, 11.5; antenna, about 2.

Rostrum brownish black, relatively long, nearly equal to remainder of head; mouthparts and palpi black. Antennæ with scape and pedicel brownish black, basal four or five flagellar segments subglobular, orange, outer segments oval, dark brown; terminal segment about one-half longer than the penultimate; verticils small and weak. Anterior vertex buffy, narrow, about one-third the diameter of scape; posterior vertex light gray, with long scattered setæ from conspicuous brown punctures.

Cervical region and propleura brownish black; pronotum greenish yellow. Mesonotal præscutum light silvery gray, clearest laterally; a pair of light brown intermediate stripes, narrowly confluent in front, slightly divergent behind; scutal lobes dark brown, median region brownish yellow; scutellum dark brown, paler on central part; mediotergite darkened anteriorly, the posterior end broadly reddish yellow, pleurotergite reddish yellow, more or less pruinose. Pleura silvery white below, more yellowed dorsally, with a narrow but conspicuous dark brown stripe extending from the fore coxæ to the wing root, involving especially the dorsal anepisternum. Halteres with stem light yellow, knob dark brown. Legs with fore coxæ darkened, as described, remaining coxæ and trochanters yellowed; femora black, all with a narrow white ring just beyond midlength, bases of fore pair restrictedly obscure yellow; tibiæ

black with a narrow white ring at slightly more than its own length beyond the base, the extreme genua whitened; tarsi black. Wings (Plate 1, fig. 4) with the ground whitened, costal border narrowly darker, yellowed beyond origin of Rs and especially above vein R_2 ; a conspicuous brown pattern, arranged as follows: Narrow seams over Rs and base of R_{2+3} , R_2 and R_{+2} , outer end of cell 1st M_2 and for a considerable distance along the veins beyond; a continuous seam along vein Cu in cell M; anterior cord narrowly darkened; other marginal areas at ends of veins M_{1+2} , M_4 and anals, most extensive on the last; still further linear marginal seams in outer radial field, all of M_4 and in both anal cells; veins very pale yellow, difficult to see in the ground fields, conspicuously dark brown in the patterned areas. Venation: Vein Sc long, Sc_1 ending about opposite midlength of cell 1st M_2 ; veins beyond cord long; cell 1st M_2 elongate, m about one-half longer than the transverse basal section of M_3 ; m-cu lying far distad, about its own length before fork of M_{3+4} ; anal veins moderately curved into the margin.

Abdomen almost uniformly brownish yellow, with greenish tints, hypopygium darker brown.

Habitat.—West Papua.

Holotype, male, Moss Forest Camp, near Lake Habbema, 2,800 meters, October 31, 1938 (*Toxopeus*); Alexander Collection.

Among the now numerous members of the *amatrix* group, *Limonia (Libnotes) tibiocincta* is most closely allied to *L. (L.) adicia* Alexander, differing most evidently in the pattern of the wings and legs, including the sub-basal white ring on the tibia.

LIMONIA (RHIPIDIA) DIONE sp. nov.

Plate 1, fig. 5; Plate 2, fig. 22.

Size large (wing over 10 millimeters); antennæ black, subpectinate in both sexes; mesonotum cinnamon brown, grayish white laterally; pleura gray, with a narrow longitudinal dark brown stripe; halteres yellow; legs with femora yellow, with a broad brownish black subterminal ring, most evident on fore legs; wings whitish hyaline, with an abundant brown spotted and dotted pattern; Sc ending beyond origin of Rs; male hypopygium with six long rostral spines on ventral dististyle.

Male.—Length, about 8 to 8.5 millimeters; wing, 10.5 to 11; antenna, about 1.4 to 1.5.

Female.—Length, about 8.5 to 10.5 millimeters; wing, 11 to 13.

Rostrum and palpi black, the former about one-half the remainder of head. Antennæ black; basal flagellar segments subglobular, the ventral faces slightly more produced to appear subpectinate, apex abruptly narrowed into a short neck; outer segment more elongate, the terminal segment from about one and one-half to nearly twice the penultimate; the subpectinate condition is found in both sexes. Head gray; anterior vertex slightly narrower than the diameter of the scape.

Cervical region and pronotum brown to dark brown. Mesonotal præscutum rich cinnamon brown, laterally broadly grayish white, median region before suture slightly darker brown; scutal lobes dark brown, median region restrictedly whitened; posterior sclerites of notum brownish yellow. Pleura gray, with a narrow but conspicuous dark brown longitudinal stripe extending from the cervical region to the base of abdomen, passing beneath the root of the halteres. Halteres light yellow. Legs with coxæ small, dark brown, gray pruinose; trochanters brownish gray; femora yellow, with a broad brownish black subterminal ring, the narrow apex yellow, the darkened ring of fore legs broader and darker; tibiæ yellow, tips blackened, broader on fore pair; tarsi yellow, tips of proximal three segments darkened, outer segments uniformly blackened; claws with a single well-developed tooth. Wings (Plate 1, fig. 5) whitish hyaline, including base, conspicuously patterned with abundant brown spots in all cells, larger and slightly more intense along costal border; major dark areas at midlength of cell Sc, an irregular virtually common mark at origin of Rs and fork of Sc, fork of Rs, stigma, and marginal seams at Cu and the anals; spots in cells commonly circular and showing little tendency to fuse; veins yellow in the ground, darker in the more heavily patterned areas. Macrotrichia on longitudinal veins beyond general level of outer end of cell 1st M_2 , with others on R_{2+3} and R_5 , lacking on Sc, M, Cu and the anals. Venation: Sc relatively long, Sc_1 ending about opposite one-third the length of Rs; cell 1st M_2 subequal to vein M_{1+2} beyond it; m-cu at or close to fork of M.

Abdomen of male brown, darker laterally, outer segments more uniformly darkened, styli paler. In female, abdomen more yellowed, narrowly darkened along the sides. Male hypopygium (Plate 2, fig. 22) with tergite, *t*, narrowed outwardly, apex very shallowly emarginate; borders, especially the apex, broadly thickened. Basistyle, *b*, with ventromesal lobe obtuse,

setæ large. Dorsal dististyle only gently curved, widened beyond midlength, suddenly narrowed into a straight apical spine; ventral style, *d*, with its area about one-half greater than that of the basistyle; rostrum elongate, tip obtuse, with a concentrated group of six long yellow spines at near midlength of outer margin. Gonapophysis, *g*, with mesal apical lobe elongate, apex slightly curved, with a subterminal flange. Ædeagus broad, narrowed apically, terminating in two small lobes.

Habitat.—West Papua.

Holotype, male, Scree Valley Camp, at foot of Mount Wilhelmina, 3,800 meters, September 18, 1938 (*Toxopeus*). Allotype, female, Letterbox Camp, 3,600 meters, August 30, 1938. Paratopotypes, males and females, with the type and with the allotype; 1 male, Lake Habbema, near Mount Wilhelmina, 3,450 meters, August 16, 1938 (*Toxopeus*).

This attractive high-mountain species is quite distinct from the other regional members of the subgenus having subpectinate antennæ. The conspicuously spotted wing pattern and the six long rostral spines of the male hypopygium provide distinctive features.

LIMONIA (DICRANOMYIA) ENCHARIS sp. nov. Plate 1, fig. 6; Plate 2, fig. 23.

Belongs to the *tristis* (*liberta*) group; size large (wing 11 millimeters or more); general coloration of mesonotum light gray, the præscutum and scutum patterned with brown; knobs of halteres paling to obscure yellow; femora black; wings whitened, with a heavy and conspicuous brown pattern of spots and dots; Sc₁ ending beyond origin of Rs, cell 1st M₂ longer than any of the veins beyond it, m-cu before fork of M; male hypopygium with posterior border of tergite very strongly convex; basistyle with two setiferous lobes additional to the ventromesal one; rostrum of ventral dististyle short and stout, with two spines.

Male.—Length, about 7.5 to 8 millimeters; wing, 11 to 12.

Female.—Length, about 8 millimeters; wing 11.

Rostrum black, slightly elongated, about one-third the remainder of head; palpi black. Antennæ black, scape more pruinose; flagellar segments oval, well-separated; terminal segment slightly longer than the penultimate. Head brownish gray; anterior vertex subequal in diameter to the scape.

Pronotum light gray. Mesonotal præscutum light gray, with three pale brown stripes; scutum light gray, lobes pale brown; posterior sclerites of notum light gray. Pleura dark colored, light gray pruinose. Halteres with stem buffy yellow, knob blackened basally, the apex broadly obscure yellow. Legs with coxæ and trochanters black, heavily gray pruinose; femora black, tibiæ a little paler, tips narrowly blackened; tarsi brownish black. Wings (Plate 1, fig. 6) whitened, with a heavy and conspicuous brown pattern, including major areas at origin of Rs, stigma, fork of Rs, near outer end of cell R₃, together with especially large marginal areas in cells Cu, 1st A and 2nd A, the last at midlength of cell; additional small circular brown dots in cells R and M, with one to few others in various cells beyond the cord; veins brown. Venation: Sc₁ ending some distance beyond origin of Rs, in cases to about one-fourth the length of the vein, Sc₂ slightly removed; cell 1st M₂ large, exceeding in length any of the veins beyond it; m-cu from about one-third to one-half its length before fork of M; cell 2nd A broad, the vein sinuous.

Abdomen dark brown, in cases the tergites more chestnut brown, patterned laterally and on posterior border with darker, outer segments more uniformly darkened. Ovipositor with cerci very slender. Male hypopygium (Plate 2, fig. 23) with posterior border of tergite, *t*, very strongly convex, the extreme border at midlength with a group of three or four long setæ, with other stronger punctures scattered over the disk. Basistyle, *b*, relatively small, its area less than that of the ventral dististyle; ventromesal lobe conspicuous, narrowed to the blunt tip which bears numerous strong setæ; a long fingerlike lobe on face of style, tipped with few very long setæ; mesal apical angle of style produced into a smaller lobe bearing much shorter setæ. Dorsal dististyle gently curved and widened on outer half, very gradually narrowed into a long straight spine; ventral style, *d*, relatively large, the prolongation stout, its apex very obtuse, with numerous small setæ at and near tip; two relatively short rostral spines. Gonapophysis, *b*, very broad basally, its mesal apical lobe a short hook.

Habitat.—West Papua.

Holotype, male, Scree Valley Camp, at foot of Mount Wilhelmina, 3,800 meters, October 20, 1938 (*Toxopeus*). Allotopotype, female, September 18, 1938. Paratopotypes, males, September 22, 1938.

This conspicuous fly is entirely distinct from the other regional members of the *tristis* group in the abundantly spotted wing pattern.

LIMONIA (DICRANOMYIA) NIVEIFUSCA sp. nov. Plate 1, fig. 7; Plate 2, fig. 24.

Belongs to the *punctulata* group; mesonotal præscutum with three reddish brown stripes, scutellum yellow, pleurotergite with a brown spot; antennæ short, black; knobs of halteres yellow; legs brown, femora with a darker terminal or nearly terminal ring; wings dusky, conspicuously patterned with darker brown and snowy white, appearing as alternate areas along the veins; cell 1st M_2 long, m-cu some distance before fork of M; male hypopygium with two very small rostral spines; mesal-apical lobe of gonapophysis simple, gently curved to the acute tip.

Male.—Length, about 7 to 8 millimeters; wing, 8 to 11.

Female.—Length, about 7.5 to 8 millimeters; wing, 10 to 11.

Rostrum brownish yellow to dark brown; palpi black. Antennæ black; flagellar segments short-oval to oval, exceeding their verticils in length. Head brownish gray; anterior vertex narrow.

Pronotal scutum brown, scutellum and pretergites yellowed. Mesonotal præscutum almost covered by three reddish brown stripes, the darker interspaces reduced to capillary lines, humeral region more yellow or grayish yellow; scutal lobes reddish brown, median region and the scutellum light yellow; mediotergite reddish brown, pleurotergite ventrally patterned with darker brown. Pleura reddish brown. Halteres with stem dusky, knobs conspicuously orange or yellow. Legs with coxæ brownish yellow; trochanters yellow; remainder of legs pale brown to brownish yellow, tips of femora and tibiæ and the outer tarsal segments darker; in cases, the femoral darkening is slightly subterminal and the tips of the tibiæ almost black; claws with a large subbasal tooth, with about four progressively smaller spines nearer base. Wing (Plate 1, fig. 7) with the ground dusky, conspicuously patterned with darker brown and snowy white, chiefly occurring as alternating areas along the veins and surrounding membrane to produce a striking effect; the darkened areas include the basal two-thirds of cells Sc and C, with major darker marks at origin of Rs and fork of Sc, on costa above the fork of Rs, and as darkenings at arculus and two areas on vein 2nd A; smaller but conspicuous similar marks at origin of Rs, interrupted at cord, outer end of cell 1st M_2 , tips of R_{1+2} and

R₃, together with still smaller marginal seams at tips of remaining longitudinal veins; veins in the darkened areas dark brown, the intervening sections broadly snowy white. Veins beyond general level of outer end of cell 1st M₂ with macrotrichia, basad of this with trichia on R₁ and R₂₊₃, lacking on Sc, Rs, basal section of R₄₊₅, all veins comprising cell 1st M₂ and the basal veins. Venation; Sc moderately short, Sc₁ ending just beyond origin of Rs, Sc₂ before this origin; cell 1st M₂ very long, subequal to or slightly exceeding the distal section of M₁₊₂, m-cu its own length or more before fork of M; cell 2nd A broad, the vein bent strongly into the margin.

Abdomen chiefly yellowed, pleural membrane dark brown, outer sternites weakly darkened. Ovipositor with cerci slender, gently upcurved. Male hypopygium (Plate 2, fig. 24) with the tergite, *t*, transverse, posterior border very shallowly emarginate, the low lobes moderately thickened, each with about twenty delicate setæ. Basistyle, *b*, with the ventromesal lobe obtuse. Dorsal dististyle stout, the outer half slightly curved, tip suddenly narrowed into a long spine; ventral style, *d*, with its total area about one-half greater than that of the basistyle, provided with relatively sparse short setæ; rostral prolongation cleaver-shaped, with two unusually small slightly separated spines. Gonapophysis, *g*, with mesal-apical lobe simple, gently curved to the acute tip.

Habitat.—West Papua.

Holotype, male, Letterbox Camp, east of Mount Wilhelmina, 3,560 meters, September 12, 1938 (*Toxopeus*). Allotopotype, female, 3,600 meters, August 30, 1938. Paratopotypes, females; paratypes, 1 female, Lake Habbema, near Mount Wilhelmina, 3,225 meters, August 4, 1938; males and females, Scree Valley Camp, at foot of Mount Wilhelmina, 3,800 meters, September 15–22, 1938 (*Toxopeus*).

Limonia (Dicranomyia) niveifusca is quite distinct from the other described regional members of the *punctulata* group in the yellow knobs of the halteres, striking wing pattern, and details of venation. The hypopygial details, especially the rostral spines, likewise are distinctive.

LIMONIA (GERANOMYIA) ATYCHIA sp. nov.

Plate 1, fig. 8; Plate 2, fig. 25

Size relatively small (wing of male 6 millimeters); rostrum of female about one-half the remainder of body, black; mesonotum fulvous, pleura more yellowed; legs light brown; wings

subhyaline, with a heavy brown costal pattern, the darkened areas more extensive than the interspaces; m-cu nearly its own length before fork of M; ventral dististyle of hypopygium with rostral spines long and slender, arising from a common basal tubercle.

Male.—Length, excluding rostrum, about 5 millimeters; wing, 6.

Female.—Length, excluding rostrum, about 6 millimeters; wing, 6.7; rostrum, about 2.9.

Rostrum black, in the holotype male with apex broken; in female relatively long, about one-half the remainder of body; palpi black. Antennæ black; outer flagellar segments elongate, verticils short. Head blackened, with a narrow gray central line extended backward to the occiput.

Pronotum fulvous brown. Mesonotum fulvous, darker posteriorly; pleura more fulvous yellow. Halteres dirty white, setæ of stem unusually long and conspicuous, especially those of ventral surface. Legs with coxæ fulvous; trochanters testaceous yellow; femora light brown, extreme tips slightly more yellowed; remainder of legs very light brown. Wings (Plate 1, fig. 8) with the ground subhyaline, with a heavy chiefly costal brown pattern, beyond the arculus including seven major areas, the ground interspaces in male wider than those of female; third dark area at origin of Rs, fourth over tip of Sc and fork of Rs, last area smallest, over R_{4+5} ; other darkened areas over cord, outer end of cell 1st M_2 and apex of vein 2nd A, the last smaller in the type male; cells M, Cu and outer posterior cells with the ground weakly suffused; very small marginal clouds at ends of veins M_3 , M_4 , Cu_1 and 1st A; veins yellow, very slightly darker in the patterned areas. Macrotrichia on longitudinal veins beyond cord, including also the outer end of M and tip of 2nd A; costal fringe of male relatively long and conspicuous. Venation: Sc very long, Sc_1 ending about opposite fork of the long Rs, Sc_2 at its tip; basal section of R_{4+5} about two-thirds R_{2+3} ; cell 1st M_2 subequal to distal section of M_{1+2} ; m-cu nearly its own length before fork of M.

Abdominal tergites dark brown, sternites, especially the basal ones, more yellowed. Male hypopygium (Plate 2, fig. 25) with the tergite, *t*, transverse, posterior border with a U-shaped emargination, the lobes low and obtuse; discal setæ larger than those of the lobes. Basistyle, *b*, with ventromesal lobe relatively long, setæ small. Dorsal dististyle unusually long and slender, outer

half strongly curved to the long apical spine; ventral style, *d*, large, its area about twice that of the basistyle, setæ small; rostral prolongation relatively short, bearing two very long slender spines from a common basal tubercle that is subequal in size to the apex beyond it. Gonapophysis, *g*, with mesal-apical lobe slender, pale. Ædeagus, *a*, narrow, apical lobes obtuse.

Habitat.—West Papua.

Holotype, male, Sigi Camp, along Sigi River, 1,500 meters, February 26, 1939 (*Toxopeus*). Allotopotype, female, February 18, 1939.

The most similar regional species is the larger *Limonia* (*Geranomyia*) *rupeus* Alexander, which differs further in the pattern of the wings and structure of male hypopygium.

LIMONIA (GERANOMYIA) DICRANOSTYLA sp. nov. Plate 1, fig. 9; Plate 2, fig. 26.

General coloration of mesonotal præscutum and scutum dark plumbeous gray, scutellum yellow, pleura reddish brown; legs brownish yellow, outer tarsal segments darker; wings subhyaline, stigma brown, vein Sc long, costal fringe of male very long and conspicuous; male hypopygium with rostral prolongation of ventral dististyle bearing a powerful arm that forks into two strong spines.

Male.—Length, excluding rostrum, about 6 millimeters; wing, 7.5; rostrum, about 3.

Rostrum relatively long, especially the palpi, dark colored. Antennæ with scape and pedicel dark brown; flagellum broken. Head dark brown; anterior vertex about one-half wider than the diameter of scape.

Pronotum dark plumbeous. Mesonotal præscutum with three dark plumbeous gray stripes, the interspaces brown, humeri more yellowed; scutum dark plumbeous, including the midregion; scutellum abruptly yellow, parascutella pale brown; mediotergite blackened, pruinose, posterior and lateral borders more reddened, pleurotergite similarly reddened. Pleura reddish brown. Halteres pale, especially the stem. Legs with coxæ testaceous yellow, fore pair slightly darker; trochanters yellow; remainder of legs brownish yellow, outer tarsal segments darker. Wings (Plate 1, fig. 9) subhyaline, stigma oval, brown; very restricted darkenings at the supernumerary crossvein in cell Sc, origin of Rs and Sc₂; veins brown. Costal fringe of male very long and conspicuous, shorter at base and before apex, longest over the central half. Venation: Sc long, Sc₁ ending nearly

opposite midlength of R_s , Sc_2 shortly removed; m shorter than the gently arcuated basal section of M_3 ; $m-cu$ close to fork of M .

Abdominal tergites and hypopygium brown, sternites paler. Male hypopygium (Plate 2, fig. 26) with the tergite, t , long, the posterior border conspicuously emarginate to form two rounded lobes that are densely provided with strong dark setæ. What seems to represent the ninth sternite is a strong central structure, expanded outwardly into lateral lobes that are provided with strong darkened setæ, the midarea membranous. Basistyle, b , about one-half as extensive as the ventral dististyle; ventromesal lobe simple. Dorsal dististyle small, strongly narrowed outwardly, apex decurved; ventral style, d , large and fleshy; rostral prolongation very large and complex, strongly sclerotized, outer half slender, gently curved; before base of outer margin with a powerful arm that divides outwardly into two spines, the inner one more strongly curved; at base of outer margin with a long rostral spine from a conspicuous basal tubercle. Gonapophysis, g , with mesal-apical lobe elongate, gently curved to the acute tip, the concave margin with microscopic hyaline points.

Habitat.—West Papua.

Holotype, male, Araucaria Camp, 800 meters, March 18, 1939 (*Toxopeus*); Alexander Collection.

Limonia (*Geranomyia*) *dicranostyla* is unique among the known regional species in the structure of the male hypopygium, particularly the rostral prolongation. Other species, including the most similar one, *L. (G.) tanytrichiata* Alexander, have the outer arm of the prolongation simple.

LIMONIA (THRYPTICOMYIA) ARCUS sp. nov.

Plate 1, fig. 10.

General coloration of thorax above reddish brown, more yellowed behind and on the pleura; antennæ black, flagellum subnodulose, the segments oval, produced into conspicuous apical necks; proximal two-thirds of basitarsi black, the remainder of tarsi snowy white; wings subspatulate in outline, crystal hyaline, entirely unpatterned; distal section of vein R_1 merging with R_2 and thence curved into vein R_{2+3} without a trace of the spur of vein R_{1+2} .

Female.—Length, about 4.8 millimeters; wing, 5.5.

Rostrum brown, paler distally; palpi brownish black. Antennæ black throughout; flagellum subnodulose, the individual segments oval, with distinct apical necks; longest verticils uni-

laterally arranged, considerably longer than the segments. Head dark brown, gray pruinose.

Thorax almost uniformly reddish brown to reddish yellow, the mesonotal præscutum and scutum darkened, posterior sclerites of notum and the pleura more yellowed. Halteres elongate, brown, knobs brownish black. Legs with coxæ and trochanters testaceous yellow; femora brown, the bases restrictedly paler; tibiæ and about the proximal two-thirds of the basitarsi brownish black to black, the remaining tarsal segments snowy white. Wings (Plate 1, fig. 10) with the prearcular region slender, giving to the wing a subspatulate appearance; crystal hyaline, unpatterned, even the stigma lacking; veins black, delicate, very distinct against the ground. Venation: Sc short, Sc₁ ending a short distance before origin of Rs, Sc₂ slightly removed from the tip, Sc₁ alone subequal or a little longer than r-m; free tip of Sc₂ pale but distinct, beyond which point vein R bends in a curve into R₂₊₃, there being no sign of a spur of vein R₁₊₂, as found elsewhere in the subgenus; cell 1st M₂ long, subequal to or a little longer than the distal section of vein M₁₊₂; m-cu at near two-thirds the length of cell 1st M₂; no vestige of Cu₂; vein 2nd A relatively short, the cell narrow.

Abdominal tergites brownish black, sternites, especially the more basal ones, somewhat more brightened.

Habitat.—West Papua.

Holotype, female, Baliem River, at south end of the Grand Valley, 1,600 meters, December 13, 1938 (*Toxopeus*); Alexander Collection.

Limonia (Thrypticomyia) arcus is quite distinct from the other regional members of the subgenus, especially in the venation, the arched course of veins R₁ and R₂ being unique among such species. The most similar form is *L. (T.) microstigma* (Alexander) which differs in details of venation.

HELIUS (HELIUS) SUBANÆMICUS sp. nov.

Plate 1, fig. 11; Plate 2, fig. 27.

Allied to *anæmicus*; size small (wing of male less than 5 millimeters); general coloration yellow; legs pale brown, outer tarsal segments more whitened; wings fulvous yellow, veins unusually glabrous; male hypopygium with apex of outer dististyle obtuse.

Male.—Length, including rostrum, 4.4 to 4.7 millimeters; wing, 4.1 to 4.8.

Female.—Length, including rostrum, 5.3 to 5.5 millimeters; wing, 4.8 to 5.

Rostrum obscure yellow, slightly more than one-half the remainder of head; palpi dark brown. Antennæ short; scape brown, remainder black; flagellar segments oval, subequal in length to their verticils. Head brownish yellow.

Thorax almost uniformly yellow. Halteres yellow. Legs with coxæ and trochanters yellow; femora and tibiæ pale brown, outer tarsal segments more whitened. Wings (Plate 1, fig. 11) fulvous yellow, prearcular and costal regions clearer yellow, stigma very pale brown; veins pale brown. Costal fringe of male long; veins unusually glabrous, beyond cord with about six or seven scattered trichia on distal section of R_{4+5} , two or three on last section of M_{1+2} ; R_1 with an almost complete series of trichia but with only a few on R. Venation: Sc_1 ending shortly before fork of Rs; branches of Rs strongly divergent, cell R_2 at margin less than one-fifth R_3 ; cell 1st M_2 relatively small, a little shorter than vein M_4 ; m-cu shortly beyond fork of M.

Abdomen yellow, subterminal segment in male in cases more darkened to form a narrow ring; hypopygium yellow. Ovipositor with valves, especially the cerci, very long and slender. Male hypopygium (Plate 2, fig. 27) with the basistyle, *b*, elongate, simple. Dististyles, *d*, terminal; outer style slender, apex simple, obtusely rounded; inner style longer, the outer fourth slender, gently decurved; surface of style with setæ, those on lower margin elongate. Ædeagus short; gonapophysis prolonged into a straight beak, the tip acute, outer margin with pale membrane.

Habitat.—Papua; West Papua.

Holotype, male, Mist Camp, West Papua, Idenburg River, 1,800 meters, January 4, 1939 (*Toxopeus*). Allotopotype, female, pinned with the type. Paratopotypes, 1 male, 1 female, January 1–4, 1939. Paratypes, 1 male, Araucaria Camp, West Papua, 800 meters, March 18, 1939; 1 male, Rattan Camp, West Papua, 1,200 meters, February 9, 1939; 1 male, Sigi Camp, along Sigi River, West Papua, 1,500 meters, February 18, 1939 (*Toxopeus*); 1 female, Goodenough Island, Papua, east slope, 900 meters, October 24–30, 1953 (*L. J. Brass*); Fourth Archbold Expedition, American Museum of Natural History.

The most similar species are *Helius* (*Helius*) *anæmicus* Alexander (Philippines, New Guinea) and *H. (H.) stolidus* Alexander (New Caledonia) which have the venation of the radial field generally as in the present fly, differing in the

venation and trichiation of the wings and in the structure of the male hypopygium.

HELIUS: RHYNCHOLIMONIA subgen. nov.

Characters strongly combining features of both the genera *Limonia* Meigen and *Helius* St. Fargeau. Front (Plate 2, fig. 28) produced into a short cylindrical rostrum with the mouthparts and palpi at extreme tip, as in *Helius*. Antennæ (Plate 2, fig. 28) 15-segmented; scape very short, less than the pedicel. Claws apparently weakly toothed at near midlength. Wings (Plate 1, fig. 12) with R_2 lacking; Rs forking far distad, the second section of Rs more than twice r-m, the outer radial branches nearly parallel to one another for most of their lengths. Other venational features more as in *Limonia* include the elongate subrectangular cell 1st M_2 , atrophied vein Cu_2 , and the course of the anal veins. Ovipositor elongate, generally as in *Helius*.

Type of subgenus.—*Helius (Rhyncholimonia) dicroneurus* sp. nov. (Australasian Region: Papuan Subregion).

The present group is based on a puzzling crane fly that strongly combines the generic characters of *Limonia* and *Helius*. The nature of the rostrum and the venation of the radial field are as in *Helius* but the venation of the remainder of the wing is just as definitely as that of *Limonia*. The discovery of the male sex presumably will confirm the assignment of the group with *Helius* rather than with *Limonia*.

HELIUS (RHYNCHOLIMONIA) DICRONEURUS sp. nov. Plate 1, fig. 12; Plate 2, fig. 28.

Size small (wing less than 5 millimeters); general coloration of thorax and abdomen yellow; wings whitened, with a conspicuous light and darker brown pattern.

Female.—Length, including rostrum, about 4.3 millimeters; wing, 4.6; rostrum, about 0.3.

Rostrum (Plate 2, fig. 28) black, palpi and mouthparts light yellow; structure as described under the subgenus; rostrum cylindrical, with short appressed setæ. Antennæ (Plate 2, fig. 28) 15-segmented; brownish yellow; flagellar segments oval, a little shorter than the verticils, terminal segment about one-half longer than the penultimate. Head pale brown; anterior vertex relatively narrow, subequal to the diameter of the scape.

Pronotum and anterior mesonotum yellowed, posterior sclerites slightly darker, surface of notum weakly pruinose; pleurotergite and pleura yellowed. Halteres relatively long, stem pale yellow, knob dark brown. Legs with coxæ reddened; tro-

chanters testaceous; femora yellow, tips rather narrowly but conspicuously dark brown; tibiæ and tarsi whitened. Wings (Plate 1, fig. 12) whitened, with a conspicuous pattern of light brown and brownish black streaks; pale pattern including a broken band at arculus, interrupted in cell 1st A; a major area at origin of Rs, with others at ends of vein R_{1+2} and outer end of cell 1st M_2 , all of these markings vaguely bordered by slightly darker brown; a narrower brown seam at cord; conspicuous brownish black seams over outer radial forks and distal section of M_{1+2} , with less evident markings at ends of veins M_2 to 2nd A, inclusive; veins light brown, darker in the patterned parts. Abundant macrotrichia on virtually all veins, lacking on bases of M, Cu and Rs. Venation: Sc long, Sc_1 ending shortly before the level of r-m, Sc_2 near its tip; Rs very long, with r-m at near two-thirds the length, the second section being nearly three times r-m; branches of Rs subparallel except at outer ends; cell 1st M_2 elongate, exceeding any of the veins beyond it; anal veins bent strongly into the margin, the cells broad.

Abdominal segments weakly bicolored, chiefly yellow, the basal and lateral parts of the sclerites slightly darker, subterminal segments darkened; ovipositor and genital shield yellowed. Ovipositor with cerci and hypovalvæ elongate, as in typical *Helius*.

Habitat.—West Papua.

Holotype, female, Lower Mist Camp, 1,600 meters, January 15, 1939 (*Toxopeus*); Alexander Collection.

Helius (*Rhyncholimonia*) *dicroneurus* is entirely distinct from all other known members of the genus. In its general appearance it more resembles an unusually small species of *Limonia* belonging to subgenera such as *Libnotes* or *Laosa*.

HEXATOMINI

ELEPHANTOMYIA (ELEPHANTOMYODES) NIVEIPES sp. nov.

Size relatively large (wing of male 10.5 millimeters); mesonotal præscutum cinnamon brown, darker medially in front; legs black, tarsal segments two to four snowy white; wings with a brown tinge, costal border and narrow seams over cord darker brown; abdomen conspicuously bicolored, brownish black, the bases of the segments broadly yellow; hypopygium brownish yellow.

Male.—Length, excluding rostrum, about 8 millimeters; wing, 10.5; rostrum, about 5.

Rostrum black, slightly more than one-half the remainder of body. Antennæ black; flagellar segments elongate, with

exceedingly long verticils. Head with vertex dull black, the posterior orbits broadly obscure yellow; anterior vertex relatively broad, exceeding the diameter of the enlarged antennal pedicel.

Pronotum and cervixal region dark brown. Mesonotal præscutum cinnamon brown, darker brown medially, especially in front; scutal lobes brown; scutellum testaceous, with abundant very long setæ, much longer than those of the præscutal interspaces; postnotum more yellowed. Pleura with propleura and anterior mesepisternum dark liver brown, posterior sclerites more cinnamon brown. Halteres with stem obscure yellow, knob dark brown. Legs with fore coxæ dark brown, remaining coxæ and trochanters brownish yellow; remainder of legs black, tarsal segments two to four snowy white, including the vestiture; femora with erect spinoid setæ on proximal third, tibiæ with similar more scattered setæ over the entire length. Wings with a brown tinge, costal border, including cells C, Sc and outer end of R_1 , infuscated, the color continued outwardly as an apical seam over outer end of cell R_3 ; very narrow and inconspicuous brown seams at origin of Rs, cord and as a cubital seam; prearcular cells concolorous with the ground; veins brown. Veins beyond cord with macrotrichia, including also most of Rs, lacking on both anal veins. Venation: Rs and R_{2+3+4} oblique at origin; cell 1st M_2 about equal to the longest vein beyond it; m-cu at near one-third the length of M_{3+4} ; proximal half of cell 2nd A relatively broad.

Abdomen conspicuously bicolored, brownish black, the bases of the segments broadly yellow, including slightly less than one-half of each involving segments two through seven, the eighth telescoped beneath the seventh; hypopygium brownish yellow.

Habitat.—West Papua.

Holotype, male, Araucaria Camp, 800 meters, April 28, 1939 (*Toxopeus*); Alexander Collection.

The only other regional member of the subgenus having white tarsi is *Elephantomyia* (*Elephantomyodes*) *percuneata* Alexander, of the Wisselmeren area of West Papua, a smaller fly with the coloration distinct and with cell 2nd A of the wings very long and narrow.

ERIOPTERINI

TRENTEPOHLIA (MONGOMA) AMISSA sp. nov.

Plate 1, fig. 13.

Thorax almost uniformly fulvous yellow; head brownish gray; abdominal tergites orange yellow, the posterior borders of the

intermediate tergites brown; wings pale yellow; cell R_3 very large, cell M_2 open by the atrophy of m.

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

Rostrum fulvous; palpi yellow. Antennæ with proximal segments brownish yellow, the outer ones slightly darker brown; flagellar segments long-subcylindrical, slightly longer than the verticils. Head brownish gray, front and the very narrow carinate anterior vertex lighter gray.

Thoracic dorsum almost uniformly fulvous yellow, cervical region, pronotum and anterior præscutum paler yellow. Pleura yellow. Halteres, yellow. Legs with coxæ pale yellow; remainder of legs whitened (broken beyond midlength of tibiæ). Wings (Plate 1, fig. 13) pale yellow, unpatterned; veins deeper yellow. Veins glabrous; distal section of R_5 with about seven or eight widely scattered trichia over the whole length. Venation Sc_1 ending about opposite R_2 , Sc_2 not evident; R_2 oblique, longer than R_{3+4} ; cell R_3 very large; cell M_2 open by atrophy of m; cell R_5 about one-half longer than its petiole, cell M_3 subequal to this element; m-cu shortly beyond fork of M; apical fusion of Cu_1 and 1st A about one-fifth r-m; cell 2nd A broad.

Abdominal tergites orange yellow, posterior borders of the segments narrowly brown, especially distinct on segments four to six; sternites yellow. Ovipositor with cerci strongly upcurved to the acute tips.

Habitat.—West Papua.

Holotype, female, Lower Mist Camp, 1,600 meters, January 15, 1939 (*Toxopeus*); Alexander Collection.

The unique type specimen is badly damaged but the species is so distinct that it is advisable to describe it. In the open cell M_2 the venation introduces still another type to those hitherto known from the Oriental-Australasian fauna. The venation is about intermediate between that in the subgenera *Mongoma* and *Trentepohlia*, and the condition of the medial field in the latter group is produced by a comparable atrophy of the basal section of M_3 , as well as m.

TRENTEPOHLIA (MONGOMA) AUSTRALASIE Skuse.

Trentepohlia australasiæ SKUSE, Proc. Linn. Soc. New South Wales (2) 4 (1890) 834-835, pl. 22, fig. 17 (wing).

Mongoma australasiæ KERTÉSZ, Cat. Dipt. 2 (1902) 216.

West Papua: Rattan Camp, 1,200 meters, March 4, 1939 (*Toxopeus*).

TRENTEPOHLIA (MONGOMA) IBELENSIS sp. nov.

Plate 1, figs. 14, 16.

General coloration of thorax brownish yellow; rostrum and labial palpi yellow, maxillary palpi and antennæ black; femora and tibiæ dark brown, the extreme tips of the latter whitened, tarsi white; femora with about five basal spinoid setæ, posterior basitarsus with a single strong modified seta; wings tinged with brown, the apex more saturated; R_2 from four to five times R_{3+4} ; cell 1st M_2 shorter than vein M_4 .

Male.—Length, about 7 millimeters; wing, 7.5.

Rostrum yellow, labial palpi brownish yellow, maxillary palpi black. Antennæ black; flagellar segments long-oval, slightly exceeding the verticils. Head dark liver brown; vertex carinate.

Cervical region and pronotum brownish yellow, the latter with unusually long erect setæ. Mesonotum almost uniformly brownish yellow, with long erect setæ, including series on the præscutal interspaces, sternal setæ elongate. Halteres with stem testaceous yellow, knob infuscated. Legs with coxæ brownish yellow, fore pair slightly darker; trochanters obscure yellow; femora uniformly dark brown, tibiæ similar, the extreme apex whitened; tarsi whitened, proximal end of basitarsus vaguely darkened; posterior femur with about five blackened spinoid setæ, about equally spaced; extreme proximal end of basitarsus dilated, with a single strong seta, followed by a concentration of short subappressed setæ. Remaining legs detached but apparently with the same type of setal armature. Wings (Plate 1, fig. 14) tinged with brown, apex more saturated; stigma darker, small and inconspicuous; veins brown. Macrotrichia on entire length of distal section of R_5 . Venation: Sc_1 shorter than vein R_2 , the latter about four or five times R_{3+4} ; cell 1st M_2 shorter than vein M_4 ; m-cu at or just beyond fork of M; apical fusion of Cu_1 and 1st A about one-fourth m-cu.

Abdomen brown, the sternites and proximal tergites more yellowed.

Habitat.—West Papua.

Holotype, male, Ibèlè Camp, 2,250 meters, November 27, 1938 (*Toxopeus*); Alexander Collection.

Trentepohlia (Mongoma) ibelensis is generally similar to *T. (M.) nigrescens* Alexander, of West Papua and the Territory of New Guinea, especially in the venation. In *nigrescens* (Plate 1, fig. 16) vein R_2 is close to or virtually at the radial fork, greatly shortening vein R_{3+4} , Sc_1 is subequal in length to vein R_2 and cell 1st M_2 is almost equal in length to vein M_4 . The

armature of the femora in the two species is different, *nigrescens* being without spinoid setæ.

TRENTEPOHLIA (MONGOMA) MACROTRICHIA sp. nov. Plate 1, fig. 15; Plate 3, fig. 31.

Size medium (wing of female 7.8 millimeters); general coloration of thorax liver brown; femora brown, tibiæ dark brown, tips whitened, tarsi white; fore femora with nearly a score of small spinoid setæ on proximal half, middle and hind femora with about ten longer basal spinoid setæ; proximal end of posterior basitarsus with three black bristles, the outermost very large; wings strongly tinged with brown; vein R_2 about five times R_{3+4} , cell 1st M_2 shorter than vein M_4 ; abdomen with cerci slender, strongly upcurved to the acute tips.

Female.—Length, about 8.5 millimeters; wing, 7.8.

Rostrum and maxillary palpi dark brown, labial palpi paler. Antennæ with scape and pedicel liver brown, flagellum paler brown; basal flagellar segments long-oval, outer ones more elongate, terminal segment long and slender; verticils shorter than the segments. Head black; vertex carinate.

Cervical region brownish black. Pronotum dark brown, with long erect black setæ. Mesothorax liver brown; præscutum with sparse erect setæ, the posterior ones longer; Halteres dusky. Legs with coxæ liver brown, fore pair darker; trochanters testaceous yellow; femora brown, bases of fore and hind pairs paler; tibiæ dark brown, tips paling to white; tarsi whitened; fore femora with nearly a score of scattered small spinoid setæ on proximal half, middle and hind femora with ten or eleven slightly longer setæ that are restricted to the bases; proximal end of posterior basitarsus with three unequal intensely black setæ, the basal one smallest, outer bristle very long and conspicuous. Wings (Plate 1, fig. 15) strongly tinged with brown, costal border more saturated; narrow vaguely indicated darkened seams over cord, R_2 and vicinity, and at wing tip. Distal section of vein R_5 with about 16 trichia distributed over the entire length. Venation: R_2 from four to five times R_{3+4} ; cell 1st M_2 relatively small, shorter than vein R_4 ; m-cu close to fork of M ; apical fusion of Cu_1 and 1st A short.

Abdominal tergites and genital shield dark brown, sternites yellowish brown. Ovipositor (Plate 3, fig. 31) with cercus relatively short, strongly upcurved to the acute tip; genital shield with very long erect to slightly reclinate setæ, some as

long as the cercus. In *tenuicercus* these setæ are pale, shorter than the cerci.

Habitat.—West Papua.

Holotype, female, Lower Mist Camp, 1,550 meters, February 1, 1939 (*Toxopeus*); Alexander Collection.

Trentepohlia (*Mongoma*) *macrotrichia* is best distinguished from other generally similar regional species by the coloration and armature of the legs and the structure of the cerci.

TRENTEPOHLIA (MONGOMA) PARALLELA ALEXANDER.

Plate 1, fig. 17.

Trentepohlia (*Mongoma*) *parallela* ALEXANDER, Ann. Mag. Nat. Hist. (12) 4 (1951) 598-599.

The unique type was from Kokoda, Territory of Papua, taken by Miss Cheesman. West Papua: Hollandia, July 1, 1938 (*Toxopeus*).

The venation (Plate 1, fig. 17) indicates the distinctness of the species. Particular attention is called to the position of vein R_2 beyond the radial fork, leaving an element R_{2+3} and with veins R_3 and R_4 extending generally parallel to one another, and to the open cubital cell.

TRENTEPOHLIA (MONGOMA) SPINASPERSA sp. nov.

Plate 1, fig. 18.

Size medium (wing of male 9 millimeters); general coloration dark liver brown; posterior femora with about eight basal spinoid setæ, with fewer widely scattered outer ones, the last at near midlength of segment; wings infuscated, costal border and the very small stigma a little darker; costal fringe short; veins R_2 and R_{3+4} subequal, Sc_1 longer; cell 1st M_2 shorter than vein M_4 .

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

Rostrum light brown, labial palpi a little paler, maxillary palpi black. Antennæ with scape and pedicel dark brown, flagellum slightly paler; flageller segments elongate, exceeding the verticils. Head brownish black.

Cervical region and pronotum dark brown. Mesonotum paler liver brown, postnotum more yellowed, especially behind. Pleura dark brown, the posterior parts more yellowed. Halteres infuscated. Legs with fore coxæ dark brown, remaining coxæ and trochanters paler brown; remainder of legs uniformly dark brown, tarsal segments very slightly paler, more so outwardly; posterior femora with eight basal spinoid setæ, the proximal ones longer, with about six additional such setæ

beyond, these more scattered, the last at near midlength of femur; posterior basitarsus with a single poorly differentiated enlarged bristle, not blackened as in some allied species. Wings (Plate 1, fig. 18) infuscated, costal border and the very small stigma a little darker; extreme wing tip slightly infuscated; veins light brown. Costal fringe short; about a dozen trichia scattered over the entire length of distal section of R_5 . Venation; Sc_1 very long, exceeding R_2 , the latter subequal to R_{3+4} ; cell 1st M_2 shorter than vein M_4 ; m-cu about one-fourth its length beyond fork of M; apical fusion of Cu_1 and 1st A short.

Abdomen dark brown, basal, sternites trifle paler; posterior borders of outer sternites slightly darker.

Habitat.—West Papua.

Holotype, male, Moss Forest Camp, near Lake Habbema, 2,800 meters, October 13, 1938 (*Toxopeus*); Alexander Collection.

In its general appearance, including the uniformly darkened femora and tibiæ, *Trentepohlia* (*Mongoma*) *spinaspersa* suggests *T. (M.) fimbriocosta* Alexander, differing especially in the short costal fringe, details of venation, and specially the armature of the posterior femora.

TRENTEPOHLIA (MONGOMA) SUBAPPRESSA sp. nov. Plate 1, fig. 19; Plate 3, fig. 32.

Size medium (wing 8.8 millimeters); general coloration of thorax liver brown; head black; legs dark brown, tarsi and tips of tibiæ paling to brownish yellow; femora without spinoid setæ, modified bristles at proximal end of posterior basitarsus relatively small and weak; wings strongly tinged with brown; R_2 subequal to or shorter than R_{3+4} ; very short to obliterated by approximation of fusion of vein M_{1+2} and M_3 ; ovipositor with cerci relatively short, compressed-flattened.

Female.—Length, about 8.5 millimeters; wing, 8.8.

Rostrum light brown; labial palpi horn yellow, maxillary palpi black. Antennæ black; flagellar segments elongate, much exceeding the verticles. Head black; setæ conspicuous, mostly slightly proclinate.

Cervical region and pronotum black, setæ of latter very long. Mesonotum liver brown; setæ small and inconspicuous, on anterior end of præscutum. Pleura liver brown. Halteres infuscated. Legs with coxæ liver brown; trochanters brownish yellow; femora dark brown; tibiæ brown, brownish yellow out-

wardly, tarsi brownish yellow; femora without spinoid armature; posterior femur with modified setæ relatively small and weak, scarcely differentiated from the normal bristles. Wings (Plate 1, fig. 19) strongly tinged with brown, costal field and the vaguely indicated stigma slightly darker brown; veins delicate, light brown. About eight scattered macrotrichia on distal section of vein R_5 , almost all on outer half. Venation: R_2 subequal to or somewhat shorter than R_{3+4} ; vein R_3 oblique; cell 1st M_2 shorter than vein M_4 beyond it, m-cu shortly beyond base; m very short to lacking (as shown) by approximation or short fusion of vens M_{1+2} and M_3 .

Abdomen dark brown. Ovipositor with cercus (Plate 3, fig. 32) relatively short and broad, compressed-flattened, upcurved to the narrowly obtuse tip.

Habitat.—West Papua.

Holotype, female, Moss Forest Camp, near Lake Habbema, 2,800 meters, October 31, 1938 (*Toxopeus*); Alexander Collection.

The most similar regional species include *Trentepohlia* (*Mongoma*) *spinaspersa* sp. nov. and *T. (M.) tenuicercus* sp. nov., best distinguished by the armature of the legs and the structure of the cerci.

TRENTEPOHLIA (MONGOMA) TENUICERCUS sp. nov. Plate 1, fig. 20; Plate 3, fig. 33.

Size medium (wing of female 8.6 millimeters); general coloration of thorax liver brown; femora dark brown, the extreme tips vaguely pale, tibiæ brown, tips more whitened, tarsi dirty white; spinoid armature of femoral bases scarcely developed; R_{3+4} longer than R_2 ; outer section of M_{1+2} short, about one-third m; apical fusion of Cu_1 and 1st A relative long; ovipositor with cerci long and slender.

Female.—Length, about 10 millimeters; wing, 8.6.

Rostrum dark brown, labial palpi more yellowed, maxillary palpi black. Antennæ black; flagellar segments elongate, subcylindrical, exceeding the verticils. Head brownish black; vertex carinate.

Pronotum liver brown; setæ long and conspicuous. Mesonotum almost uniformly liver brown, setæ shorter and sparse, on præscutum more concentrated at anterior end; setæ of scutellum short, slightly reclinate, sternopleurite with longer setæ. Halteres infuscated, base of stem paler. Legs with coxæ light brown, trochanters paler; remainder of legs elongate, femora

dark brown, extreme tip vaguely pale; tibiæ brown, apex very narrowly more whitened; tarsi dirty white; spinoid setæ of femur lacking or scarcely modified; setæ at proximal end of basitarsus inconspicuous, not enlarged or blackened, the large only about one-half longer than the more distal normal setæ. Wings (Plate 1, fig. 20) tinged with brown, wing tip more suffused; stigma small, darker brown; very narrow brown seams at origin of R_s , base of cell 1st M_2 and on the posterior cord; veins light brown. Macrotrichia over the whole length of distal section of vein R_5 . Venation: R_{3+4} longer than R_2 ; outer elements of cord in oblique alignment; outer section of $1+$ short, about one-third m; m-cu at or shortly before fork of M, varying slightly in the two wings of the type; apical fusion of Cu_1 and 1st A relatively long, exceeding one-half the length of m-cu.

Abdomen liver brown, the pattern discolored by enclosed eggs. Ovipositor with cercus (Plate 3, fig. 33) unusually long and slender, gently upcurved to the narrowly obtuse tip.

Habitat.—West Papua.

Holotype, female, Top Camp, 2,100 meters, January 25, 1939 (*Toxopeus*); Alexander Collection.

Trentepohlia (Mongoma) tenuicercus is most similar to species such as *T. (M.) brevipes* Alexander, *T. (M.) spinaspersa* sp. nov., *T. (M.) subappressa* sp. nov. and some others, being best distinguished by the venation, armature of the legs, and conformation of the cercus of the ovipositor.

GONOMYIA (GONOMYIA) IRIANENSIS sp. nov.

Plate 3, figs. 29, 30.

Size medium (wing of male about 6 millimeters); mesonotal præscutum and scutal lobes dark brown, scutellum yellow, pleura yellow, variegated by pale brown; rostrum and halteres yellow; wings milky subhyaline, veins brownish yellow, Sc long; male hypopygium having the inner dististyle with a powerful black curved spine at base; apex of phallosome produced into a long recurved spine.

Male.—Length, about 5.5 millimeters; wing, 6.2.

Rostrum obscure yellow; palpi black. Antennæ black, outer flagellar segments paler; basal flagellar segments long-oval, the outer ones becoming longer and more slender, exceeding their verticils. Head dark gray.

Pronotum and pretergites light yellow. Mesonotal præscutum dark brown, humeral region and lateral borders yellowed;

scutal lobes dark brown, median region more pruinose; scutellum yellow; mediotergite light brown, pruinose, pleurotergite yellowed. Pleura yellow, variegated with pale brown on anepisternum, ventral sternopleurite and meron. Halteres pale yellow. Legs with coxæ and trochanters yellow, fore coxæ somewhat darker; remainder of legs yellowish brown, outer tarsal segments darker. Wings (Plate 3, fig. 29) milky subhyaline, prearcular and costal regions light yellow; veins pale brownish yellow, trichia dark. Macrotrichia on veins of about the outer three-fourths of wing, including about the outer two-thirds of both anal veins. Venation: Sc long, Sc₁ ending about opposite one-third Rs, Sc₂ faint, not far removed; cell R₃ at margin very extensive; basal section of R₅ short; m-cu just beyond fork of M.

Abdominal tergites brown, sternites and hypopygium more yellowed. Male hypopygium (Plate 3, fig. 30) with outer lobe of basistyle, *b*, oval, shorter than the longest setæ. Outer dististyle, *d*, pale, inner apical margin with a glabrous flange; inner style with the two apical fasciculate bristles large, yellow; outer margin at base with a powerful curved blackened spine that bears a single strong seta at near midlength; a small darkened spine on body of style before apex. Phallosome, *p*, pale, with a single blackened apophysis, with a further small lateral spine at near midlength; apex of ædeagus a long recurved spine.

Habitat.—West Papua.

Holotype, male, Moss Forest Camp, near Lake Habbema, 2,850 meters, August 23, 1938 (*Toxopeus*); Alexander Collection.

This is the first record of a member of the typical subgenus from New Guinea. The fly is best distinguished from other species of similar appearance by the hypopygial structure, particularly the inner dististyle and phallosome.

STYRINGOMYIA FUMITERGATA sp. nov.

Plate 3, fig. 34.

Allied to *didyma* in structure of the hypopygial dististyle; general coloration of notum brown, patterned with darker, pleura yellowed; hypopygium with tergal lobe narrowed, apex of sternite deeply emarginate; dististyle without a slender outer arm.

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

Rostrum and palpi brown. Antennæ with scape and pedicel blackened, flagellum testaceous yellow. Head brown, setæ un-

usually numerous, including several small yellow bristles additional to the four major ones.

Pronotum brownish yellow, patterned with brownish black, including the lateral borders. Mesonotum brownish yellow, conspicuously patterned with dark brown, including intermediate stripes on anterior half of præscutum, additional to the lateral borders; scutal lobes brown, darker laterally; scutellum brownish yellow, basal depressions conspicuous; postnotum darkened. Pleura chiefly testaceous yellow. Halteres broken. Legs with coxæ and trochanters testaceous yellow; femora yellow, darkened rings narrow but conspicuous, dark brown, narrowly interrupted beneath; tibiæ yellow, tips infuscated, with a further narrow ring just before midlength; tarsi pale, tips of segments very narrowly darkened, terminal segment black. Wings yellowed, with the usual darkened pattern at r-m, outer end of cell 1st M_2 , m-cu and less evidently at tip of 2nd A; veins yellow, somewhat darker near margins. Venation: Cell 2nd M_2 narrowly petiolate; vein 2nd A curved strongly to margin.

Abdominal tergites almost uniformly dark brown, with a pale area on either side at and near midlength, sternites and hypopygium more yellowed. Male hypopygium (Plate 3, fig. 34) with the tergite, *t*, narrowed outwardly, apex prolonged into a small relatively narrow setuliferous lobe; disk immediately cephalad of the extended part of lobe with a linear pocket of dense yellow setæ. Sternite, *s*, long and narrow, apex with a large U-shaped emargination, lateral lobes very slender, each tipped with a long black bristle that is about one-third longer than the lobe; surface with abundant delicate setulæ and a few normal setæ. Basistyle, *b*, with a single spinoid seta, unusually stout, subequal in length to its basal lobe. Dististyle, *d*, unusually compact, without an elongate outer arm, the conformation about as figured, including two flattened blades that are margined with black spinoid setæ, the larger blade with abundant long setæ on outer margin; a small slender blade, tipped with an acute spine. Phallosome, *p*, simple, unusually pale, the only blackened part being a small apical point.

Habitat.—West Papua.

Holotype, male, Sigi Camp, along Sigi River, 1,500 meters, February 26, 1939 (*Toxopeus*); Alexander Collection.

Styringomyia fumitergata is allied to *S. biroi* Edwards, *S. didyma* (Grünberg), and *S. kertészi* Edwards, all differing

among themselves in coloration, particularly of the abdomen, and in the details of structure of the male hypopygium.

STYRINGOMYIA MULTISETOSA sp. nov.

Plate 3, fig. 35.

Allied to *ensifera*; male hypopygium with apical tergal lobe very long, with abundant retrorse yellow setæ; sternite broad, with several strong subapical setæ; basistyle with two modified spinoid setæ; dististyle complex, all three arms with combs of blackened spinoid setæ.

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

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

Rostrum and palpi brownish yellow. Antennæ with scape darkened, remainder of organ clearer yellow. Head light brown; vertex with four powerful black bristles, two on the anterior vertex more divergent, the posterior pair more correct.

Thorax obscure yellow, faintly patterned with darker; præscutal setæ relatively weak; each scutal lobe with a single strong erect to slightly porrect bristle; mediotergite with a pair of more slender erect setæ. Pleura yellow, clearer ventrally. Halteres obscure yellow. Legs with coxæ and trochanters light yellow; femora yellow, each with two brown rings that are much narrower than the interspace; tibiæ and tarsi yellow, terminal tarsal segment black. Wings light yellow, with small brown spots at r-m, m-cu, and outer end of cell 1st M₂; small marginal darkenings from R₅ to 2nd A, the last large. Venation: Cell 2nd M₂ sessile; vein 2nd A unsprung.

Abdomen yellow, tergites conspicuously patterned with brown, including a pair of spots in basal half and the posterior border, these marks more extensive and crowded on outer segments. Male hypopygium (Plate 3, fig. 35) with the apical lobe of tergite, *t*, very long, narrowed to the obtuse tip, surface with very abundant retrorse yellow setæ. Sternite, *s*, broad, apex with several strong setæ, the larger ones subterminal. Basistyle, *b*, with two modified spinoid setæ, the outer one more slender, sessile; inner seta from a low tubercle, its tip less produced. Dististyle, *d*, complex in structure, as shown; outer arm with the slender outer half darkened, base dilated, its outer end with numerous delicate setæ, base of arm with two combs of spinoid setæ, the linear basal ones shorter; intermediate and inner arms of style as shown, each with a comb of spinoid setæ; inner arm with additional armature, as shown, the outer spine slender; at base of style with a further slender arm with a recurved blackened spine, its tip obtuse. Phallosome, *p*, massive, as shown.

Habitat.—West Papua.

Holotype, male, Rattan Camp, 1,200 meters, February 12, 1939 (*Toxopeus*); Alexander Collection.

Other related regional species having the basistyle of the hypopygium bispinous include *Styringomyia ensifera* Edwards and *S. ensiferoides* Alexander, all three species differing among themselves in hypopygial characters, particularly the tergite, sternite and dististyle, especially the intermediate and inner arms of the last.

STYRINGOMYIA PHALLOSOMICA sp. nov.

Plate 3, fig. 36.

Allied to *spinicaudata*; general coloration yellow, mesonotum patterned with black; legs yellow, darkened rings of femora and tibiæ pale and inconspicuous; wings yellow, faintly patterned with brown, appearing chiefly as narrow seams and darkenings to the veins; male hypopygium with tergite broad, outer apical angles slightly produced; apex of sternite produced medially; all arms of dististyle with conspicuous spinoid setæ; phallosome with a single terminal spine and two pairs of marginal projections, the outer ones acute.

Male.—Length, about 6.8 to 7 millimeters; wing, 5 to 5.2.

Rostrum and palpi brownish yellow. Antennæ with scape light brownish yellow, slightly darkened beneath; pedicel brownish yellow; flagellum light yellow, outer segments slightly darkened. Head yellow, anterior vertex slightly darker; two pairs of setæ on anterior vertex, the longer anterior pair divergent, setæ of posterior vertex weak.

Pronotum above light brown, sides yellow. Mesonotum yellow, patterned with black including a Ω -shaped area on either side of præscutum, with further darkenings on scutal lobes; sides of scutellum infuscated, postnotum darkened. Pleura and pleurotergite light yellow. Halteres yellow. Legs with coxæ and trochanters yellow; remainder of legs yellow, femoral rings very pale brown, inconspicuous, tibial darkenings more evident; terminal tarsal segment black; setæ of posterior legs longer, especially on femora; outer ends of femora, tibiæ and basitarsi with scattered blackened bristles. Wings yellow, faintly patterned with brown, including narrow seams in cord, outer end of cell 1st M_2 , m-cu, distal end of vein Cu and less evidently at tip of 2nd A, the markings restricted and indicated chiefly by darkening of the veins which otherwise are light yellow. Sparse macrotrichia on both branches of R, lacking on M. Venation: Cell 2nd M_2 at base with petiole punctiform or lacking; vein 2nd A simple.

Abdomen conspicuously bicolored, yellow, posterior borders broadly dark brown. Male hypopygium (Plate 3, fig. 36) with the tergite, *t*, broad, posterior border subtruncate to very gently convex, outer lateral angles slightly produced; apical margin, including the lobes, with longer setæ, those of the disk exceedingly minute. Sternite, *s*, narrowed outwardly, the central part farther produced; glabrous or with a few microscopic setulæ only; outer end of sternite with long setæ. Basistyle, *b*, with a single long spinoid seta, this about two and one-half to three times as long as its basal tubercle. Dististyle, *d*, with outer arm delated, with long retrorse setæ throughout its length, terminal elongate bristle normal; intermediate arm flattened, provided with long black setæ, about as figured; inner arm more slender, the spinoid setæ shorter. Phallosome, *p*, distinctive, as figured, including an unpaired outer spine and two pairs of blackened points, the outer pair acutely pointed, the basal ones obtuse.

Habitat.—West Papua.

Holotype, male, Lower Mist Camp, 1,600 meters, January 15, 1939 (*Toxopeus*). Paratopotype, male.

Styringomyia phallosomica is allied to *S. platystyla* Alexander and *S. spinicaudata* Alexander, especially to the former, in the patterned wings and general structure of the hypopygium, differing particularly in the various details of the latter, including the tergite, sternite, dististyle and phallosome.

STYRINGOMYIA SETIFERA sp. nov.

Plate 3, fig. 37.

Allied to *biroi*; size very small (wing less than 4 millimeters); general coloration yellow, patterned with darker; male hypopygium with apex of tergite rounded, without lateral shoulders; apex of sternite emarginate; dististyle with only two sets of lobes, variously modified, as described.

Male.—Length, about 5.5 millimeters; wing, 3.8.

Female.—Length, about 4 millimeters; wing, 3.4.

Rostrum light yellow, palpi darker. Antennæ with scape blackened beneath, light yellow above, pedicel black, flagellum obscure yellow. Head buffy yellow.

Pronotum with disk yellow, margins dark brown. Mesonotal præscutum light yellow, the cephalic lobe dark brown, disk with the interspaces weakly infuscated, setæ relatively short; laterally behind with a darkened area that crosses the suture and covers the lateral parts of the scutal lobes; a single erect seta on mesal

edge of each scutal lobe; scutellum pale yellow, with two erect setæ, parascutella slightly darker; mediotergite brownish yellow. Pleurotergite and pleura reddish yellow. Halteres pale yellow. Legs with coxæ reddish yellow; trochanters yellow; femora yellow, with two narrow and incomplete darkened spots; tibiæ with apex and a weak ring before midlength darkened, the setæ at these points stouter and blackened; tarsi obscure yellow, terminal segment black; posterior femora of male on outer two-thirds with a series of more than a dozen very long erect setæ that are subequally spaced. Wings pale yellow, with the usual four darkened spots, placed at r-m, outer end of cell 1st M_2 , m-cu and tip of vein 2nd A. Venation: Cell 2nd M_2 narrowly sessile; vein 2nd A strongly curved to margin, unspurred.

Abdomen yellow, posterior tergal borders narrowly darkened, the areas notched but not completely interrupted medially; seventh tergite with a median dark T-shaped area. Male hypopygium (Plate 3, fig. 37) with apical lobe of tergite, *t*, rounded, without lateral shoulders; setæ directed backwards, on disk with a triangular group of longer yellow setæ directed cephalad. Sternite, *s*, narrow and pale, apex with a conspicuous U-shaped, notch, lateral lobes each with a single seta about three times its own length. Basistyle, *b*, with a single spinoid seta, a little longer than its basal tubercle, on mesal face of latter at base with a fingerlike spur. Dististyle, *d*, compact, about as shown, without a slender outer arm, as is common in the genus; the usual intermediate lobe flattened and more of less scooplike, the broader lobe with a small lateral spicule; inner arm elongate, the longer part narrowed outwardly, provided with a double row of spinoid setæ; inner part shorter, terminating in a compact group of blackened peglike setæ. Phallosome, *p*, relatively slender, including two outer flattened blades, before their bases with two divergent blackened spines.

Habitat.—West Papua.

Holotype, male, Bernhard Camp, on Idenburg River, 50 meters, September 27, 1938 (*Toxopeus*). Allotopotype, female.

Styringomyia setifera is allied to *S. biroi* Edwards and *S. kertészi* Edwards in the lack of the outer arm of the dististyle of the hypopygium. All three species differ evidently in the details of the hypopygium, particularly the tergite, dististyle and phallosome. Edward's figures of his species are somewhat diagrammatic but clearly indicate that there are two distinct species involved.

TOXORHINA (TOXORHINA) DIGITIFERA sp. nov.

Plate 3, fig. 38.

Size small (wing of male 4.3 millimeters); general coloration of thorax black, more or less pruinose; rostrum short, about two-thirds the wing; halteres yellow; wings tinged with brown; macrotrichia on all veins beyond cord, Rs and distal third of M; m-cu beyond fork of M; dististyle of male hypopygium with a slender fingerlike lobe on outer margin between the basal horn and the beak.

Male.—Length, excluding rostrum, about 3.6 millimeters; wing, 4.3; rostrum, about 2.8.

Rostrum black, about two-thirds the wing. Antennæ black throughout. Head large, blackened pruinose.

Mesonotum discolored; præscutum and scutal lobes black, humeral region paler, sides of præscutum light gray pruinose; posterior sclerites of notum brownish black. Pleura brownish black, more pruinose on dorsal sternopleurite and ventral pteropleurite. Halteres yellow. Legs with coxæ brownish yellow, tips clearer yellow; trochanters brownish yellow; femora light yellowish brown but appearing darker because of the vestiture. Wings tinged with brown, in one wing of the type with the outer margin of radial field more suffused, this condition not evident on the opposite wing; veins brown, trichia black. Veins beyond level of origin of Rs with macrotrichia, including all veins beyond cord, Rs, and distal third of M. Venation: Sc short, Sc₁ ending a very short distance beyond origin of Rs, Sc₂ far retracted; cell R₅ narrowed at margin; m-cu longer than distal section of Cu₁ or nearly three times the basal section of M₃₊₄.

Abdomen brownish black, hypopygium slightly more brightened. Male hypopygium (Plate 3, fig. 38) with posterior border of tergite, *t*, convexly rounded, broadly obtuse. Basistyle, *b*, with setæ simple, relatively sparse, those of mesal face small and weak. Dististyle, *d*, with beak very long and narrow, gradually narrowed to the obtuse tip; outer margin with a short curved hornlike lobe, in its axil with a long slender fingerlike lobe, about two-thirds the length of the dilated base, lying generally parallel to the beak; outer dististyle small and weak, sinuous, closely appressed to the base of the major style. Ædeagus, *a*, with arms unusually long and slender, closely appressed to one another.

Habitat.—West Papua.

Holotype, male, Mist Camp, Idenburg River, 1,800 meters, January 4, 1939 (*Toxopeus*); Alexander Collection.

Toxorhina (Toxorhina) digitifera is quite distinct from other regional members of the subgenus in the structure of the hypopygium, particularly the dististyles.

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ILLUSTRATIONS

[Legend: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; p, phallosome; s, sternite; t, tergite.]

PLATE 1

- FIG. 1. *Limonia (Laosa) pavo* sp.nov.; venation.
2. *Limonia (Laosa) suffalcata* sp.nov.; venation.
3. *Limonia (Libnotes) invicta* sp.nov.; venation.
4. *Limonia (Libnotes) tibiocincta* sp. nov.; venation.
5. *Limonia (Rhipidia) dione* sp.nov.; venation.
6. *Limonia (Dicranomyia) eucharis* sp.nov.; venation.
7. *Limonia (Dicranomyia) niveifusca* sp.nov.; venation.
8. *Limonia (Geranomyia) atychia* sp.nov.; venation.
9. *Limonia (Geranomyia) dicranostyla* sp. nov.; venation.
10. *Limonia (Thryptocomyia) arcus* sp.nov.; venation.
11. *Helius (Helius) subanaemicus* sp.nov.; venation.
12. *Helius (Rhyncholimonia) dicroneurus* sp.nov.; venation.
13. *Trentepohlia (Mongoma) amissa* sp.nov.; venation.
14. *Trentepohlia (Mongoma) ibelensis* sp.nov.; venation.
15. *Trentepohlia (Mongoma) macrotrichia* sp.nov.; venation.
16. *Trentepohlia (Mongoma) nigrescens* Alexander; venation.
17. *Trentepohlia (Mongoma) parallela* Alexander; venation.
18. *Trentepohlia (Mongoma) spinaspersa* sp.nov.; venation.
19. *Trentepohlia (Mongoma) subappressa* sp.nov.; venation.
20. *Trentepohlia (Mongoma) tenuicercus* sp.nov.; venation.

PLATE 2

- FIG. 21. *Limonia (Libnotes) invicta* sp.nov.; male hypopygium.
22. *Limonia (Rhipidia) dione* sp.nov.; male hypopygium.
23. *Limonia (Dicranomyia) eucharis* sp.nov.; male hypopygium.
24. *Limonia (Dicranomyia) niveifusca* sp.nov.; male hypopygium.
25. *Limonia (Geranomyia) atychia* sp.nov.; male hypopygium.
26. *Limonia (Geranomyia) dicranostyla* sp. nov.; male hypopygium
27. *Helius (Helius) subanaemicus* sp.nov.; male hypopygium.
28. *Helius (Rhyncholimonia) dicroneurus* sp.nov.; head, antenna.

PLATE 3

- FIG. 29. *Gonomyia (Gonomyia) irianensis* sp.nov.; venation.
30. *Gonomyia (Gonomyia) irianensis* sp.nov.; male hypopygium.
31. *Trentepohlia (Mongoma) macrotrichia* sp.nov.; ovipositor, cercus.
32. *Trentepohlia (Mongoma) subappressa* sp.nov.; ovipositor, cercus.
33. *Trentepohlia (Mongoma) tenuicercus* sp.nov.; ovipositor, cercus.
34. *Styringomyia fumitergata* sp.nov.; male hypopygium.
35. *Styringomyia multisetosa* sp.nov.; male hypopygium.
36. *Styringomyia phallosomica* sp.nov.; male hypopygium.
37. *Styringomyia setifera* sp.nov.; male hypopygium.
38. *Toxorhina (Toxorhina) digitifera* sp.nov.; male hypopygium.

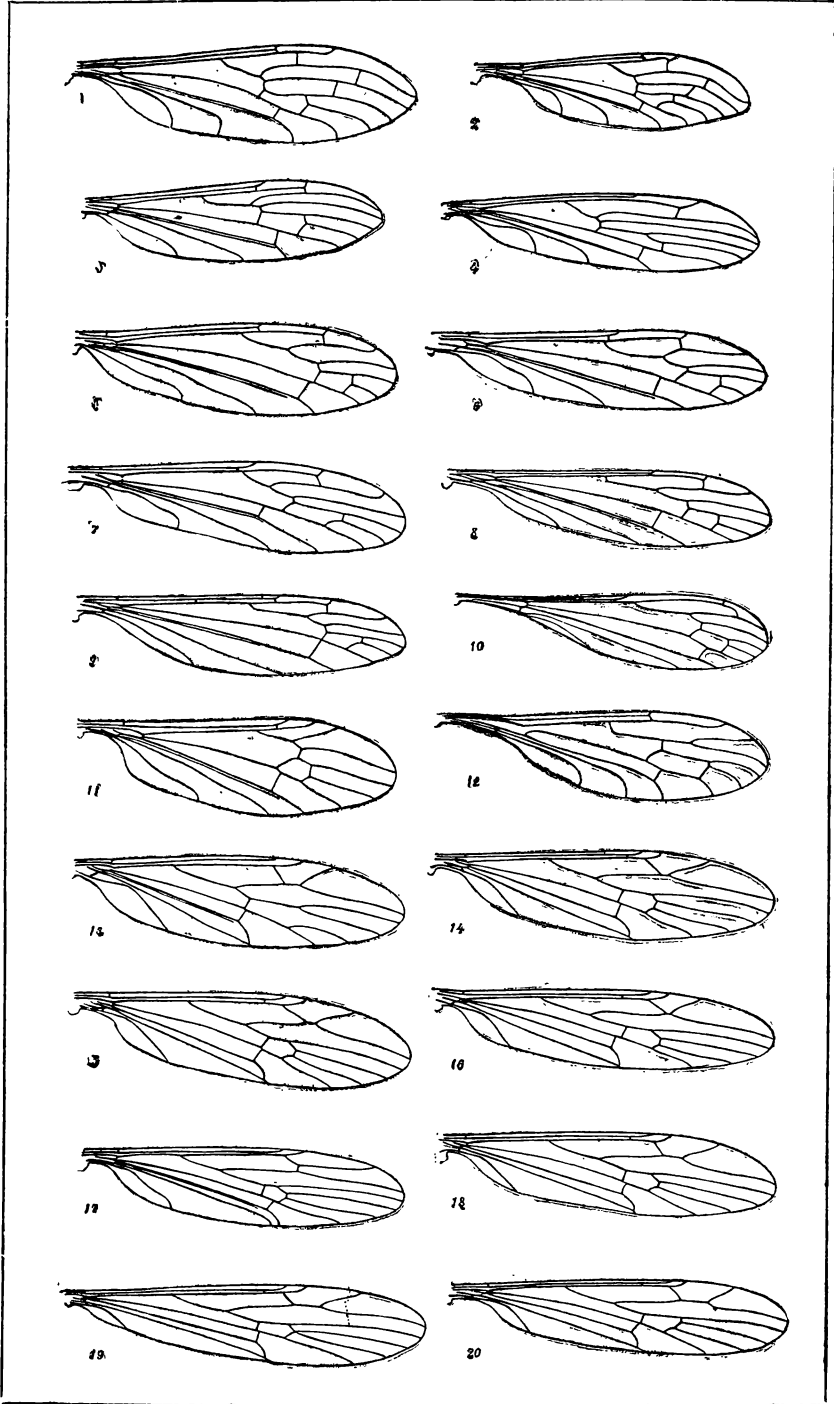


PLATE 1.

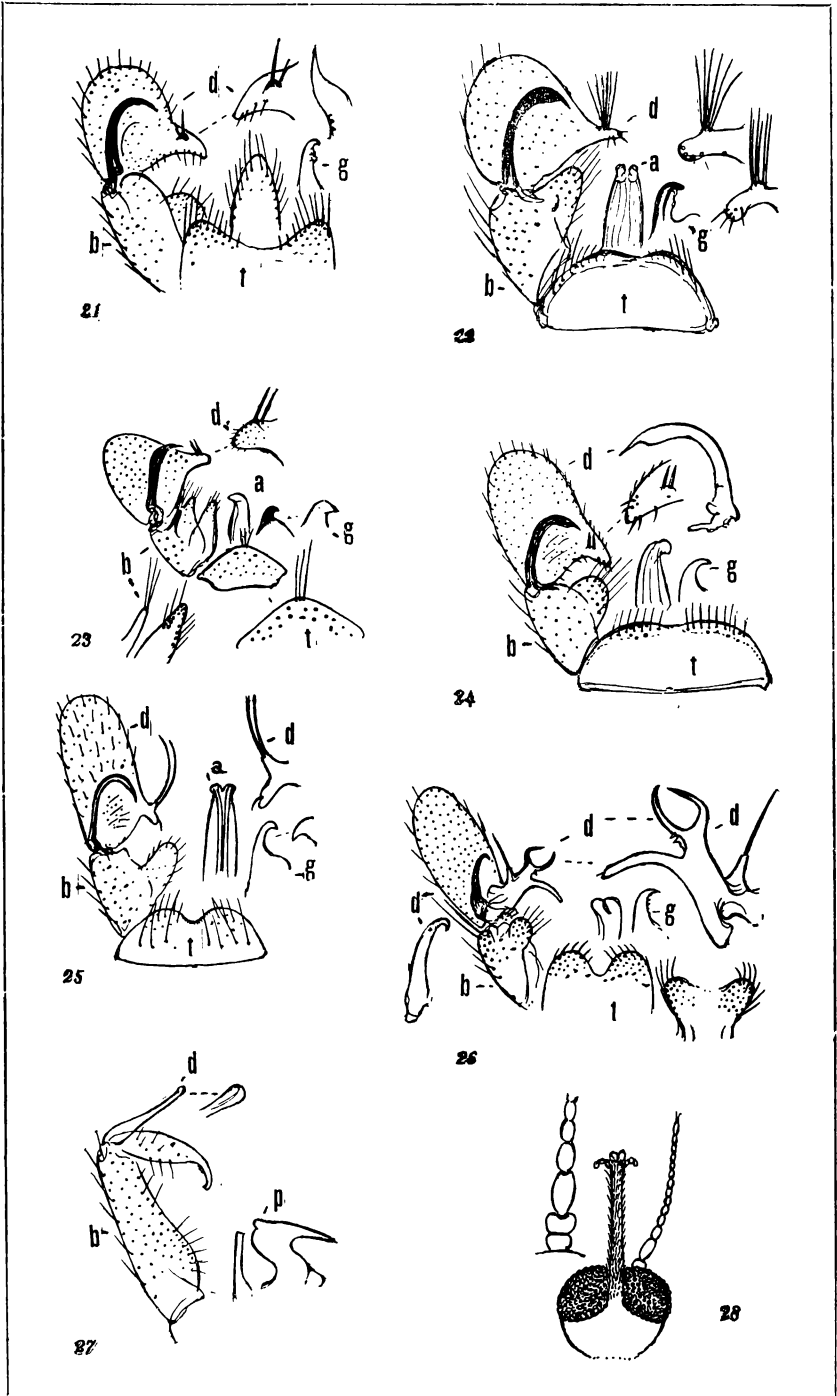


PLATE 2.

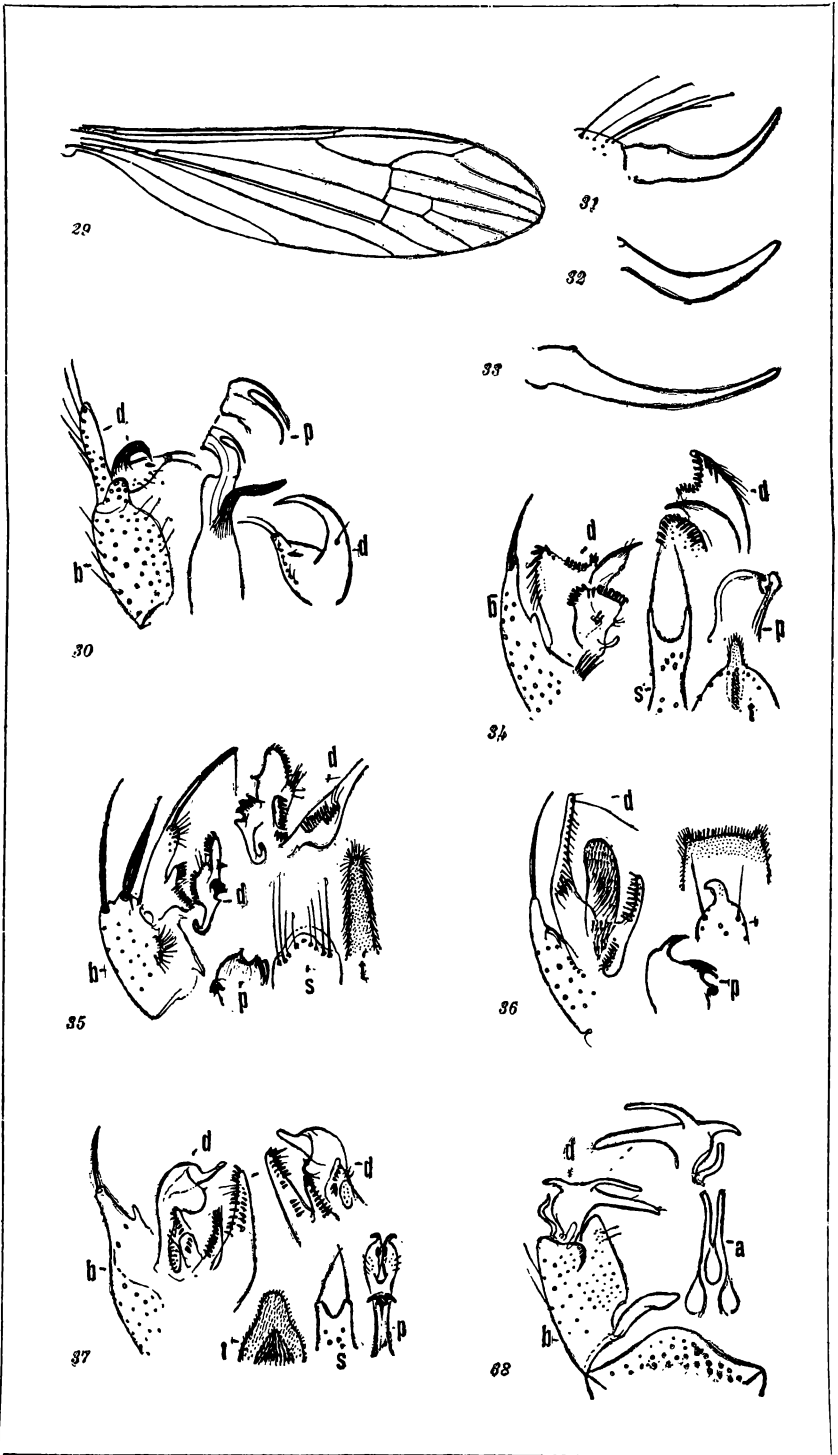


PLATE 3.