

Studia Entomologica, vol. 14, fasc. 1-4, novembro 1971

**Undescribed or little-known Tropical
American Tipulidae (Diptera)**

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Undescribed or little-known Tropical American Tipulidae (Diptera) Part IV

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(With 43 text-figures)

The preceding part under this title was published in *Studia Entomologica*, volume 10, December 1967. At this time I am describing species from Panama, Brazil and Argentina, the great majority having been collected by Lt. Col. Gordon Field and associates in Panama during 1953 and 1954, the materials from Chiriqui in the extreme west being of particular interest. The latter specimens are from El Volcán, altitude about 4200 feet, and Cerro Punta, at 6200 feet, with a few further species from other stations. These materials are in the Alexander Collection through the kindness of the collector. A small number of species are from Argentina and Brazil, as discussed in the text.

Tipulinae

1. *Tipula (Microtipula) luteidorsata* sp. n.

Dorsum of head and mesonotum conspicuously yellow, the sides brown; antennae with flagellar segments bicolored; wings infuscated, prearcular field, cells *C* and *Sc*, and the stigma darker brown; conspicuous whitened areas before stigma and across base of cell *1st M*₂, *R*₁₋₂ atrophied; abdominal tergites narrowly obscure orange yellow medially, sides brownish black, sternites brownish yellow, basal segments clearer yellow; ovipositor with valves short, cerci yellow with obtuse tips, hypovalvae triangular in lateral outline, strongly darkened.

Female. — Length about 13 mm.; wing 13 mm. Frontal prolongation of head shorter than the remainder, light yellow above, including the nasus, more infuscated beneath; palpi brown, basal segment more yellowed. Antennae with scape and pedicel very pale yellow, third and fourth segments slightly darker yellow, succeeding segments bicolored, yellow, basal enlargements darkened, terminal segment black. Head with front and anterior vertex very light yellow, genae cinnamon brown.

Pronotal scutum light yellow medially, sides brown. Mesonotum almost uniformly yellowed, brown laterally, including the border of the praescutum, more narrowed on sides of scutal lobes, parascutella, and the interpostnotal suture. Pleura light yellow. Halteres with stem light brown, knob dark brown. Legs with coxae and trochanters light yellow; femora light brown, tibiae slightly darker, especially outwardly, tarsi dark brown. Wings

infuscated, prearcular field, cells C and Sc , and stigma conspicuously darker brown, outer ends of cells R_2 and R_3 slightly infumed; veins light brown, darker in the patterned areas, including the anterior cord; whitened marks before stigma and across base of cell *1st* M_2 , slightly invading cells R and M_3 . Venation: R_{1-2} atrophied; petiole of cell M_1 long, about two-thirds the cell or three times m ; $m-cu$ on M_4 producing a short perpendicular basal section of the latter vein; cell *2nd* A relatively broad.

Abdominal tergites medially obscure orange yellow, sides more broadly brownish black; sternites brownish yellow, the basal segments clearer yellow. Ovipositor with valves short, cerci more yellowed, tips obtuse, hypovalvae shorter, triangular in lateral outline, margin strongly darkened.

Holotype, ♀, El Volcán, Chiriqui, Panama, altitude 4200 feet, at light, April 4, 1954 (Gordon Field).

In the nature of the wing pattern the present fly is most similar to *Tipula* (*Microtipula*) *spinicauda* Alexander, likewise from Panama, this differing evidently in the blackened antennae and in the coloration of the thoracic dorsum. Various other members of the subgenus have the costal border of the wing darkened, somewhat as in the present fly, all differing in the coloration of the body and appendages.

2. *Tipula* (*Microtipula*) *obstinata* sp. n.

General coloration of thorax yellow, praescutum and scutum obscure orange; wings pale yellow, patterned with light and darker brown; abdomen orange yellow with a subterminal dark brown ring; male hypopygium with the outer dististyle a slender yellow rod that is bent at a right angle at near two-thirds the length, apex truncated; beak of inner dististyle straight, slender.

Male. — Length about 12 mm.; wing 12 mm.; antenna about 4.5 mm. Frontal prolongation of head obscure yellow, palpi slightly darker. Antennae with scape brownish yellow, pedicel and first flagellar segment light yellow, succeeding segments bicolored, yellow, the small basal enlargement brownish black, outer segments more uniformly darkened. Head light brown.

Mesonotal praescutum and scutum obscure orange, unpatterned, posterior sclerites of notum and the pleura clearer yellow. Halteres with stem yellow, the small knobs slightly darker. Legs with coxae and trochanters yellow; remainder of legs broken. Wings pale yellow, conspicuously patterned with light brown, including the prearcular field, costal border, and outer radial cells; darker brown seams on vein R_{4-5} , $m-cu$, and outer medial

veins; veins light brown, darker in the patterned areas, *Cu* more yellowed. Venation: Basal section of R_{4-5} long, straight, reducing *r-m*, basal section of vein strongly arcuated; cell M_1 from about two to three times its petiole; *m-cu* close to midlength of M_{3-4} .

Abdomen chiefly orange yellow, subterminal segments dark brown to form a conspicuous ring; hypopygium yellowed. Male hypopygium (Fig. 1) with ninth tergite, *t*, broad, posterior border with a shallow V-shaped emargination, the broad lobes with numerous black spinoid setae, those of disk and outer lateral angles light yellow. Proctiger feebly sclerotized, without spinous points. Region of ninth sternite, $9s$, between the basistyles with a broad depressed-flattened yellow plate, its apex nearly truncate. Basistyle, *b*, with an obtuse darkened lobe, not roughened or corrugated as in various allied species. Outer dististyle, *d*, a slender yellow rod, bent at a right angle at near two-thirds its length, apex truncate, at point of angulation with a blackened flange; inner style broader, similarly angulated, the long beak straight and slender, lower beak small, apex obtuse; region of dorsal crest with a group of long black setae. Eighth sternite, $8s$, only slightly narrowed outwardly, apex very broad, nearly truncate, with long yellow setae that are concentrated on either side of midline.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, April 4, 1954 (Gordon Field).

The present fly is generally similar to certain regional species that have the wing pattern and venation approximately the same, all differing among themselves in hypopygial structure, especially the basistyle and both dististyles. Such species include *Tipula (Microtipula) intemperata* Alexander (Ecuador), *T. (M.) jivaronis* Alexander (Peru), *T. (M.) lichyana* Alexander (Venezuela), and some others.

Limoniinae, Limoniini

3. *Limonia (Caenoglochina) lotax* sp. n.

Size large (wing of male about 6.5 mm.); general coloration of mesonotum polished yellow and brownish black; antennae relatively long, flagellar segments strongly nodulose; wings with *Sc* long; male hypopygium with tergal lobes conspicuous, setiferous; mesal face of basistyle with two complex lobes; dististyle with rostral region and a posterior extension with numerous blackened spicules.

Male. — Length about 5.7-6 mm.; wing 6-6.7 mm.; antenna about 2.3-2.5 mm. Rostrum brown; palpi darker brown, terminal segment slender, longer than the penultimate. Antennae of male dark brown; flagellar segments strongly nodulose, the

terminal stems about one-third as long as the swollen bases, terminal segment long, nearly one-half longer than the penultimate, narrowed very gradually to the nearly acute apex. Head brown.

Pronotum brownish black. Mesonotal praescutum yellowed, with a blackened central stripe that ends some distance before suture; scutal lobes extensively brown, central area more yellowed; scutellum dark brown, parascutella more yellowed; postnotum brownish yellow. Pleura polished brownish yellow. Halteres with stem yellow, knob infuscated. Legs with fore coxae dark brown, remaining coxae and all trochanters yellow; femora and tibiae medium brown, tarsi darker. Wings strongly tinged with brown, costal region and stigma slightly darker; veins brown. Venation: *Sc* long, *Sc*₁ ending shortly before fork of *Rs*, slightly shorter than *Sc*₂; *m-cu* at fork of *M*.

Abdominal tergites brownish black, sternites yellowed. Male hypopygium (Fig. 5) large. Ninth tergite, *t*, with posterior border convex, with two conspicuous widely separated lobes that are provided with very numerous long setae, their punctures virtually contiguous. Basistyle, *b*, with two conspicuous lobes on mesal face, outer one very irregular, proximal lobe long, its base narrowed, more than the outer half expanded into a head that bears abundant very long setae. Dististyle, *d*, very complex, its body larger than a long-oval outer lobe; rostral region diagnostic, darkened, including the larger beak and a small posterior extension, each with numerous blackened spicules. Gonapophysis, *g*, flattened, outer end more narrowed, terminating in a microscopic point. Aedeagus, *a*, slender. Proctiger, *p*, a conspicuous depressed-flattened lobe that is provided with abundant setae, the outer ones more darkened.

Holotype, ♂, on slide, El Volcán, Chiriqui, Panama, altitude 4200 feet, April 4, 1954 (Gordon Field). Paratopotypes, ♂♂, April 7-20, 1954.

Limonia (*Caenoglochina*) *lotax* is quite distinct from all other known species in the hypopygial structure, as described. The most similar such species include *L. (C.) pugnax* Alexander (Surinam) and *L. (C.) somnifica* Alexander (Ecuador). The various parts of the hypopygium are extremely complicated and may best be interpreted by the figure provided.

4. *Limonia* (*Caenolimonia*) *distantia* sp. n.

Size relatively large (wing of male 6-7 mm.); general coloration of thorax light yellow, pronotum with a narrow dark brown central

line that barely extends onto the praescutum; antennal flagellum and the halteres yellow; legs yellow, tarsi darker, femur with a relatively narrow darkened ring at near the basal third, outer two-thirds uniformly yellow; wings light yellow, restrictedly patterned with dark brown, without supernumerary crossveins in cells; male hypopygium with rostral spines of dististyle at near midlength of the prolongation, the apex of latter slender.

Male. — Length about 6-6.5 mm.; wing 6-7.5 mm.; antenna about 1.2-1.4 mm. **Female.** — Length about 7 mm.; wing about 8 mm. Rostrum and palpi black, the former exceeding in length one-half the remainder of head. Antennae with scape and pedicel light brown, flagellum yellow; proximal flagellar segments transversely oval, intermediate ones rounded, outer five oval, progressively more lengthened outwardly, terminal segment about one-third longer than the penultimate. Head light brown to grayish brown, the narrow anterior vertex light gray.

Cervical region dark brown. Prothorax light yellow, notum with a narrow dark brown central stripe. Mesothorax light yellow with faint greenish tinges, praescutum with a narrow darkened median line at extreme cephalic end. Halteres light yellow. Legs with coxae and trochanters light yellow; femur yellow, with a narrow brown ring about twice its length beyond the base and at near one-third the length of the segment, the ring broadest and most intense on fore legs, narrower and paler on posterior pair, in cases obsolete on posterior legs; tibiae yellow, tarsi brown, darker outwardly. Wings (Fig. 2) light yellow, prearcular and costal field to the wing tip more saturated butter yellow; restricted dark brown marks include tip of *Sc*, confluent with a seam over basal deflection of *Rs*, stigmal area as a narrow seam over *R*₂ and free tip of *Sc*₂ cord, outer end of cell *1st M*₂, and a conspicuous seam on outer third of vein *2nd A*; a further microscopic spot at tip of *R*₃; veins yellow, brown in the patterned areas, vein *Cu* dark saturated yellow. Venation: *Sc* short, in virtual alignment with the perpendicular and sometimes spurred base of *Rs*; no supernumerary crossveins in cells; cell *1st M*₂ nearly twice the distal section of *Cu*₁; *m-cu* close to fork of *M*, in cases slightly before or beyond.

Abdomen yellow throughout or with outer segments weakly more darkened. Male hypopygium (Fig. 6) with posterior border of tergite, *t*, convex, very shallowly emarginate, lateral angles extended into long points. Basistyle, *b*, with ventromesal lobe relatively small, oval, lower mesal face of style with several long dark setae. Dorsal dististyle, *d*, with apex narrowed into a long

slender spine; ventral style relatively small, its area subequal to the basistyle, rostral prolongation with the two relatively short spines placed close together at near midlength, outer end of prolongation slender, nearly three times the length of a spine. Gonapophysis with mesal-apical lobe narrow. Aedeagus, *a*, at apex terminating in two very small lobes.

Holotype, ♂, Cerro Punta, Chiriqui, Panama, altitude 6200 feet, taken at light over a stream, April 20, 1954 (Gordon Field). Allotopotype, ♀. Paratopotypes, 12 ♀ ♂, with the types; paratype, ♂, El Volcán, Chiriqui, altitude 4200 feet, April 4, 1954.

The most similar species is *Limonia* (*Caenolimonia*) *galbipes* Alexander from Ecuador (*Studia Entomologica*, 10: 288-289, fig. 3; 1967) which likewise has the legs chiefly yellow with the very narrow scarcely evident darkened ring placed shortly before the tip of femur. An error in the description of this latter species should be corrected. In comparing *galbipes* with *L. (C.) brachycantha* Alexander, the final line in part reads "*brachycantha*, which differs evidently in the almost uniformly yellow legs". The intended and correct reading is "*brachycantha*, from which *galbipes* differs evidently in the almost uniformly yellow legs" — l.c., page 289. In other species of the subgenus the legs are patterned with brown or black. All previously described species are listed in the 1967 paper cited above.

The paratype male of the present fly, El Volcan, is smaller than the others of the series and in one wing only there is an adventitious crossvein in cell R_3 placed far distad.

5. *Limonia* (*Dicranomyia*) *brunneistigma* sp. n.

General coloration of thorax yellow, patterned with polished black areas that appear brownish gray from a very heavy pruinosity; halteres yellow; wings light yellow, the oval brown stigma very conspicuous, veins yellow; male hypopygium with posterior border of tergite convex, at midline with a small shallow emargination, tergal setae long but pale and inconspicuous; apex of dorsal dististyle a long slender spine; ventral dististyle large, about four times the basistyle, with two rostral spines.

Male. — Length about 5-6 mm.; wing 5-6.8 mm.; antenna about 0.8-0.9 mm. Rostrum brown, palpi darker. Antennae with scape black, pedicel brownish black, flagellum light brownish yellow, outer segments only slightly darker; flagellar segments oval, progressively longer and more slender outwardly, subequal in length to their verticils. Head gray.

Pronotum darkened medially, sides light yellow. Mesonotal praescutum yellow with three stripes that appear brownish gray over a polished black ground; scutum yellow, centers of lobes and lateral parts of suture similarly black and heavily pruinose, median region and posterior angles yellow; scutellum brownish

gray, obscure yellow medially, parascutella yellow; mediotergite blackened, less heavily pruinose. Pleura and pleurotergite chiefly brown, dusted with gray, sternopleurite more reddened, metapleural area yellow. Halteres yellow. Legs with trochanters and coxae yellow, remainder of legs broken. Wings light yellow, veins slightly darker yellow; no pattern excepting the conspicuous oval brown stigma. Longitudinal veins beyond cord with macrotrichia. Venation: Sc_1 ending a short distance before origin of Rs , Sc_2 removed; Rs and basal section of R_{4-5} subequal, both gently curved; cell 1st M_2 subequal in length to distal section of M_3 ; $m-cu$ close to fork of M .

Abdominal tergites obscure brownish yellow, especially on bases, darker outwardly, sternites obscure yellow; outer segments, including the basistyles, brown, the ventral dististyles yellowed. Male hypopygium (Fig. 7) with posterior border of tergite, t , convex, at midline with a small shallow emargination; tergal setae long and pale, inconspicuous. Basistyle, b , small, its area about one-fourth or less that of the ventral dististyle; ventromesal lobe large, only a little less than the body of the style. Dorsal dististyle, d , a gently curved sickle, its apex a long very slender spine; ventral style fleshy, rostral prolongation short, outer margin before midlength with two approximated spines that are about one-third longer than the apex beyond. Gonapophysis, g , with mesal-apical lobe a short curved spine, its tip acute. Aedeagus, a , broad, the genital tubes approximated, ending at apex.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, April 13, 1954 (Gordon Field). Paratopotype, ♂.

Limonia (Dicranomyia) brunneistigma differs from all other presently known Neotropical species by the yellow wings with conspicuously darkened stigma.

6. *Limonia (Dicranomyia) submulsa* sp. n.

Allied to *mulsa*; size large (wing about 10 mm.); disk of mesonotal praescutum with three confluent black stripes; femora brownish yellow, tips narrowly clear yellow; wings weakly infuscated with a darker brown pattern including two major areas along cord; cell M_4 at wing margin very extensive; $m-cu$ longer than distal section of Cu_1 ; male hypopygium with apex of the dorsal dististyle narrowly obtuse, ventral style very large and fleshy, spines of rostral prolongation on lower margin near apex, each spine extended into a hairlike point; gonapophysis with mesal-apical lobe unusually slender.

Male. — Length about 7.5-8 mm.; wing 9-10 mm.; antenna about 1.8-2 mm. Female. — Length about 9-10 mm.; wing

10-11 mm. Rostrum and palpi black. Antennae black; flagellar segments oval, outwardly becoming longer, terminal segment longest, verticils shorter than the segments. Head dull grayish black.

Pronotal scutum large, black, scutellum pale. Mesonotal praescutum with disk extensively covered by three confluent black stripes, humeral and lateral borders obscure yellow; scutal lobes blackened, median region and the scutellum obscure yellow; postnotum brown to black. Pleura chiefly dark brown, the meral region more yellowed. Halteres with stem yellow, the small knobs brown. Legs with fore coxae blackened, remaining coxae and all trochanters yellow; femora brownish yellow, tips narrowly clearer yellow; tibiae and basitarsi obscure yellow, outer tarsal segments brownish black. Wings (Fig. 3) weakly infuscated, with a darker brown pattern, including the oval stigma and extensive paler brown clouds over the cord, interrupted at *M* to form two separate areas; a conspicuous darkening in cell *M* adjoining vein *Cu*; veins light brown. Venation: *Sc*₁ ending about opposite origin of *Rs*, only a little shorter than the latter vein; cell *M*₄ at margin very extensive, subequal to or more extensive than the combined cells *M*₂ and *M*₃; *m-cu* longer than distal section of *Cu*₁.

Abdominal tergites and hypopygium dark brown, sternites obscure yellow. Male hypopygium (Fig. 8) with tergite, *t*, relatively long, gently narrowed outwardly, lobes low, with numerous long pale setae, their small circular punctures conspicuous. Basistyle, *b*, small, its area approximately one-fourth that of the ventral dististyle; ventromesal lobe placed far distad near outer end of mesal face. Dorsal dististyle, *d*, a small curved sickle, tip obtuse; ventral style large and fleshy, rostral prolongation small, the two spines placed on lower margin near apex, each spine slightly sinuous, extended into a hairlike point. Gonapophysis, *g*, with mesal-apical lobe unusually slender. Aedeagus with apex scarcely produced.

Holotype, ♂, North Aconquiya, Catamarca, Argentina, altitude 1700 meters, October 2, 1968 (L. E. Pena). Allotopotype, ♀, pinned with type. Paratopotypes, 20 ♂ ♀, on nine pins, taken with the types.

The most similar species is *Limonia (Dicranomyia) mulsa* (Alexander), described from Peru, which has the venation of the medial field of the wing much as in the present fly. There are important differences in the hypopygia of the two species, including the tergite, rostral prolongation of the ventral dististyle, and the gonapophyses.

7. *Limonia (Geranomyia) aneura* sp. n.

Size small (wing of male to about 5 mm.); rostrum about one-half the remainder of body; general coloration of thorax dark brown, posterior sclerites paler; legs and knobs of halteres brown; wings almost uniformly brown, stigma vaguely more darkened, *Sc* short, cell M_2 open by atrophy of *m*; male hypopygium with ventral dististyle very large; rostral spines subequal in diameter, the outer one about three-fifths as long as the inner.

Male. — Length, excluding rostrum, about 4.3-4.5 mm.; wing 4.5-5 mm.; rostrum alone about 2-2.5 mm.; antenna about 1.1-1.2 mm. Rostrum brownish black, long, about one-half the remainder of body, labial palpi paler outwardly, maxillary palpi black. Antennae black; flagellar segments oval with truncated apices, terminal segment about one-half longer than the penultimate. Head brownish black.

Cervical region brownish black. Pronotal scutum brown, scutellum and pretergites obscure yellow. Mesonotal praescutum and scutal lobes dark brown, central region of scutum paler; scutellum and postnotum paler brown. One of the paratype specimens shows indications of more reddish brown praescutal stripes. Pleura dark brown, posterior sclerites and the pleurotergite more yellowed. Halteres with stem yellowed, knob dark brown. Legs with coxae and trochanters obscure yellow; remainder of legs almost uniformly dark brown; femoral bases very narrowly pale. Wings (Fig. 4) almost uniformly brown, the oval stigma only vaguely more darkened; veins brown. Venation: *Sc* short, Sc_1 ending almost opposite origin of *Rs* in type, in other specimens slightly beyond; cell M_2 open by atrophy of *m*, cell M_3 a little shorter than its petiole; *m-cu* at or shortly beyond the fork of *M*.

Abdominal tergites and the hypopygium dark brown, sternites slightly paler. Male hypopygium (Fig. 13) with posterior border of tergite, *t*, very shallowly emarginate, the lobes low and obtuse. Ventral dististyle, *d*, very large, at least four times the basistyle; rostral spines subequal in diameter, the outer one from about three-fifths to two-thirds the length of the inner. Gonapophysis, *g*, with mesal-apical lobe slender, the tip acute.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, May 11, 1954 (Gordon Field). Paratopotypes, 2 ♂♂, May 11-12, 1954.

Limonia (Geranomyia) aneura is unique among American species of members of the subgenus in the open cell M_2 of the wings. The most similar species is *L. (G.) disparilis* Alexander, from Mexico to Panama, with cell *1st M₂* present and with the hypopygial structure differing in details, especially the greatly reduced outer spine of the rostrum of the ventral dististyle. I have one specimen that was assigned to this latter species where cell M_2 of the wing is open as in the present fly but which certainly is distinct in hypopygial characters. Other regional species with uniformly darkened wings and with cell *1st M₂* present include *L. (G.) cerberus* (Alexander), *L. (G.) contorta* Alexander, and some others, all larger than the present fly and with distinctive hypopygia.

8. *Limonia (Geranomyia) monorhaphidia* sp. n.

General coloration of mesonotum brown, praescutum with four more cinnamon brown stripes; legs dark brown, tarsi slightly paler brown; wings strongly darkened, stigma short-oval, darker brown, Sc_1 ending about opposite midlength of R_s ; male hypopygium with the dorsal dististyle a slender curved sickle, ventral style very large and fleshy, its area about four times that of the basistyle; rostral prolongation with a single spine from a large basal tubercle; gonapophysis with mesal-apical lobe narrowed to an acute point; apex of aedeagus bilobed, each lobe produced into a slender pale spine.

Male. — Length, excluding rostrum, about 7 mm.; wing 6.5-7 mm.; rostrum alone about 4.3-4.5 mm. Female. — Length, excluding rostrum, about 8 mm.; wing 7 mm.; rostrum about 5 mm. Rostrum very long, approximately two-thirds the wing, black throughout. Antennae brownish black to black. Head brownish black, anterior vertex very narrow, slightly pruinose.

Pronotum dark brown. Mesonotal praescutum with four cinnamon brown stripes, the ground darker brown, including a median vitta and more extensive humeral areas; scutal lobes dark brown, the narrow midarea and scutellum obscure yellow; postnotum cinnamon brown. Pleura medium brown, more yellowed ventrally. Halteres with stem brown, knob brownish black. Legs with coxae and trochanters obscure yellow; remainder of legs dark brown, tarsi paling to yellowish brown. Wings strongly darkened, stigma small, short-oval, slightly darker brown; veins brown. Venation: Sc_1 ending about opposite midlength of R_s , Sc_2 slightly removed; supernumerary crossvein in cell Sc far distad, beyond midlength of Sc ; cell *1st M₂* subequal to distal section of M_3 ; *m-cu* close to fork of M .

Abdomen dark brown, including hypopygium. Male hypopygium (Fig. 14) with tergite, *t*, transverse, posterior border with conspicuous lobes provided with long black setae. Basistyle, *b*, about one-fourth the area of the large ventral dististyle, ventromesal

lobe unusually long, with very long light brown setae. Dorsal dististyle, *d*, a slender gently curved sickle, narrowed to a long spine; ventral style with rostral prolongation small, at its base with a larger tubercle that bears a single spine, this about one-third longer than the tubercle itself. Gonapophysis, *g*, with mesal-apical lobe narrow, flattened, narrowed to an acute point. Aedeagus, *a*, with apex bilobed, each lobe produced into a slender pale spine.

Holotype, ♂, El Valle, Panama, altitude 2000 feet, December 23, 1953 (Gordon Field). Allotopotype, ♀. Paratopotype, 2 ♂♂, December 22-23, 1953.

Other Neotropical members of the subgenus having strongly darkened wings without pattern except for the stigma include *Limonia* (*Geranomyia*) *cerberus* (Alexander), *L. (G.) contorta* Alexander, *L. (G.) infamosa* Alexander, *L. (G.) heteroxipha* Alexander, *L. (G.) lachrymalis* (Alexander), *L. (G.) pentheres* (Alexander), *L. (G.) turbida* (Alexander), and some others, all differing in details of coloration, venation, and hypopygial structure. The only one of the above having a single rostral spine on the ventral style is *infamosa*, of Southeastern Brazil, quite distinct from the present fly in the details of the hypopygium.

9. *Limonia* (*Rhipidia*) *alampetis* sp. n.

General coloration of thorax dull orange, pleura with a conspicuous brownish black longitudinal stripe; antennae of male with seven bipectinate segments, dark brown throughout; wings uniformly brown, unpatterned except for the vaguely darker stigma, *Sc*₁ ending about opposite midlength of *Rs*; abdominal tergites brownish black, sternites bicolored yellow and dark brown; male hypopygium with posterior border of tergite very shallowly emarginate, rostral prolongation of ventral dististyle with two long spines, the apex beyond short and very obtuse.

Male. — Length about 5.5-6 mm.; wing 5-6 mm.; antenna about 2-2.2 mm. Rostrum and palpi dark brown. Antennae dark brown throughout; in male with seven bipectinate flagellar segments, the longest branches to nearly twice the segments; first flagellar segment simple, tenth with a single short branch, the eleventh merely protuberant, terminal segment elongate, simple, narrowed to the slender apex; vestiture of segments relatively short and inconspicuous, as compared with *eliana*. Head dark brown.

Pronotum dark brown, central area of scutum orange. Mesonotum dull orange, praescutum with indications of three slightly darker brownish orange stripes, lateral borders narrowly darkened. Pleura brownish orange above, clear light yellow beneath, central part with a very conspicuous brownish black

longitudinal stripe extending from the cervical region to base of abdomen. Halteres with stem dusky, knob dark brown. Legs with coxae and trochanters clear light yellow; remainder of legs light brown, tarsi not further darkened. Wings uniformly suffused with brown, stigma only vaguely darker; veins brown. Venation: Sc_1 ending nearly opposite midlength of Rs , Sc_2 near its tip; $m-cu$ shortly beyond fork of M .

Abdominal tergites dark brown to brownish black, sternites bicolored, yellow, posterior borders narrowly dark brown, outer segments uniformly brownish black. Male hypopygium (Fig. 15) with tergite, t , relatively long, narrowed outwardly, posterior border very shallowly emarginate; no well developed modification of the proctiger. Basistyle, b , with ventromesal lobe stout, outer face with abundant long setae. Dorsal dististyle, d , a stout gently curved blackened rod, the tip acute; ventral style small, its area less than that of the basistyle; rostral prolongation beyond the two long spines short and very obtuse, less than one-half the length of the spines. Gonapophysis, g , with mesal-apical lobe blackened, straight, the tip a microscopic point.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, April 4, 1954 (Gordon Field). Paratopotypes, several ♂♂, April 4-20, 1954.

In the Neotropical fauna there are about eight previously described species of the subgenus that are of medium size and have the wings uniformly darkened and unpatterned except for the stigmal area. These species are *Limonia (Rhipidia) aspilota* Alexander (Ecuador), *L. (R.) eliana* Alexander (Southeastern Brazil), *L. (R.) eremnoptera* Alexander (Ecuador, Peru), *L. (R.) illuminata* Alexander (Peru), *L. (R.) melanaria* Alexander (Peru), *L. (R.) procterigerica* Alexander (Southeastern Brazil), *L. (R.) sprucei* Alexander (Ecuador), and *L. (R.) tiresias* Alexander (Peru). Of the above, *aspilota*, *eremnoptera*, *illuminata* and *proctigerica* have a more or less developed proctigerical scaffolding that is lacking in the remaining species and likewise in the present fly. All of these species are separated among themselves chiefly in details of coloration and in the structure of the antennae and male hypopygium. The species most similar to the present fly is *eliana*.

10. *Helius (Helius) quadrivena* sp. n.

Size relatively large (wing of male about 6 mm.); general coloration of body dark brown; legs brown, tarsi extensively snowy white; wings weakly infuscated, stigma pale brown, veins R_{4-5} and M_{1-2} extensively fused to produce the effect of four veins issuing from cell 1st M_2 ; male hypopygium with dististyles terminal or virtually so, with no production of the basistyle; outer dististyle unequally bidentate; phallosome with gonapophyses appearing as small blackened curved horns, aedeagus short.

Male. — Length about 5-6 mm.; wing 4.6-6 mm.; antenna about 0.9-1.1 mm. Rostrum shorter than the remainder of head, dark brown; palpi brown, terminal segment long and slender, nearly equal to the combined remaining segments. Antennae brown, short, less than twice the length of the rostrum. Head dark brown.

Thorax almost uniformly dark brown, the region of the suture, posterior produced angles of the scutal lobes, pleurotergites and posterior pleural sclerites more brownish yellow. Halteres with stem brownish yellow, knob brown. Legs with coxae dark brown, trochanters paler; femora dark brown, tibiae slightly paler; basitarsi broadly brown proximally, the outer third and remainder of tarsi snowy white. Wings (Fig. 9) weakly infuscated, stigma elongate, pale brown; veins darker brown. Venation: Sc_1 ending just before fork of Rs , Sc_2 close to its tip; vein R_{4-5} extensively fused with M_{1-2} to obliterate $r-m$, the distance only a little less than the basal section of M_{1-2} , there thus appearing to be four veins issuing from cell 1st M_2 ; $m-cu$ at near two-thirds M_{3-4} .

Abdomen, including hypopygium, dark brown. Male hypopygium (Fig. 15) with the dististyles virtually terminal, the apical production of the basistyle very slight. Outer dististyle, d , very unequally bidentate, the subterminal spine short and straight, axial spine strongly curved. Phallosome, p , with gonapophyses appearing as small blackened curved horns; aedeagus strongly recurved, about twice as long as the horns of the apophyses.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, April 4, 1954 (Gordon Field), Paratopotypes, ♂♂.

Other regional members of the genus having the venation about as in the present fly include *Helius* (*Helius*) *quadrifidus* Alexander (Mexico) and *H.* (*H.*) *tetracradus* Alexander (Honduras), these having the dististyles subterminal in position and with further differences in the structure of the outer dististyle and phallosome.

11. *Orimarga* (*Diotrepha*) *quinquefusca* sp. n.

General coloration of thorax yellow, pleura clearer yellow; halteres light yellow; femora whitened, tips abruptly black; tibiae white, extreme base and apex black; wings yellowed, unpatterned except for five pale brown clouds on disk, outer veins with trichia; male hypopygium with both gonapophyses slender, aedeagus massive, blackened, with a conspicuous lateral arm.

Male. — Length about 8.5 mm.; wing 5 mm. Rostrum obscure yellow, mouthparts brown, palpi black. Antennae light

brown (outer segments broken). Front, anterior vertex and narrow posterior orbits light yellow, posterior parts of head light brown.

Pronotum brown. Mesonotum almost uniformly yellowish brown, praescutum with a vague more darkened central line, darker and narrower in front; sides of notum and the pleura clearer yellow, center of mesepisternum with a vague pale brown darkening. Halteres light yellow. Legs with coxae and trochanters yellow; femora whitened, tips abruptly black, tibiae white, extreme base and apex blackened; tarsi white, outer segments weakly darkened. Wings yellowed, unpatterned except for five pale brown clouds at origin and fork of R_s , R_2 , $r-m$ and $m-cu$; veins very pale brown, scarcely darker in the clouded areas. Macrotrichia on veins R_3 and distal ends of R_{4-5} , M_{1-2} and M_3 . Venation: R_{1-2} nearly three times R_2 , the latter in transverse alignment with $r-m$.

Abdomen light brown above, sternites more yellowed, seventh and eighth segments darker brown to form a ring, hypopygium light brown. Male hypopygium with dististyles only slightly fused basally, distal fourth of outer style narrowed into a slender spine. Phallosome with both gonapophyses slender; aedeagus massive, blackened, with a conspicuous lateral arm, broad at base, bent at a right angle into a darkened rod.

Holotype, ♂, Cerro Punta, Chiriqui, Panama, altitude 6200 feet, at light above mountain stream, April 19, 1954 (Gordon Field).

Other regional species that have the coloration of the legs generally as in the present fly and with trichia on the outer wing veins include the subgenotype *Orimarga* (*Diotrepha*) *mirabilis* (Osten Sacken) and *O. (D.) setosivena* sp. n. These differ from the present fly in the wing pattern and especially in hypopygial structure.

12. *Orimarga* (*Diotrepha*) *setosivena* sp. n.

General coloration of mesonotum brown, sides of praescutum yellowed; legs white, apex of femora conspicuously black, base and tip of tibia more narrowly black; wings with prearcular and costal fields light yellow, remainder weakly darkened; longitudinal veins beyond cord with abundant trichia; male hypopygium with both gonapophyses obtuse at tips, aedeagus moderately sclerotized, broadly depressed-flattened, apex conspicuously emarginate.

Male. — Length about 9-9.5 mm.; wing 5-6.5 mm.; abdomen about 7.5 mm. Female. — Length about 9.5-10 mm.; wing 6.5-6.8 mm. Rostrum and palpi brownish black. Antennae with scape brown, remainder darker brown. Head gray.

Cervical sclerites dark brown; pronotum pale brown. Mesonotal praescutum with disk light brown, sides yellowed; scutal lobes dark brown, central region and posterior sclerites paler brown. Pleura brownish yellow, with a vague darker longitudinal stripe, metapleural region darkened. Halteres with stem pale yellow, knob weakly darkened. Legs with coxae and trochanters yellow; femora whitened, tips conspicuously black, tibiae white, base and apex more narrowly black; tarsi white, terminal segment dark brown. Wings (Figs. 10, 11) with prearcular and costal regions light yellow, remainder weakly darkened, including the outer radial field; veins light brown, more brownish yellow in the brightened areas. Longitudinal veins beyond cord with abundant trichia, including R_{1-2} , R_{3-4} , outer section of R_{4-5} , M_{1-2} and M_3 . Venation: Sc long, Sc_1 ending from about one-third to nearly midlength of the very long Rs ; R_{1-2} very variable in length, from subequal to R_2 to nearly three times this length (in the holotype and other specimens); vein R_2 shortly proximad of $r-m$; $m-cu$ far basad, first section of M only about one-third the length of second section.

Abdomen very long and slender, black, including the hypopygium. Male hypopygium (Fig. 17) with outer dististyle, d , very slightly longer than the inner, the latter with relatively sparse stout setae. Phallosome, p , with the lateral gonapophyses or interbases short, very slightly narrowed outwardly; inner apophyses, g , longer, tips broadly subtruncate, microscopically toothed. Aedeagus moderately sclerotized, broadly depressed-flattened, apex conspicuously emarginate.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, April 4, 1954 (Gordon Field). Allotopotype, ♀, April 7, 1954. Paratopotypes, ♂ ♀, April 4, 1954. Paratype, ♂, Cerro Punta, Chiriqui, altitude 6206 feet, at light above mountain stream, April 20, 1954 (Gordon Field).

Other species of the subgenus that have the wings and legs much as in the present fly include the subgenotype, *Orimarga (Diotrepha) mirabilis* (Osten Sacken), which has the outer wing veins with conspicuous trichia as in this species but with the hypopygium quite distinct, especially the long slender aedeagus. *O. (D.) atribasis* (Alexander) and *O. (D.) luteipleura* Alexander have the leg pattern much the same but the outer wing veins are glabrous or virtually so and the details of the hypopygia are distinct.

13. *Orimarga (Orimarga) transversalis* sp. n.

General coloration of body brown; halteres dark brown; legs yellow; wings tinged with brown, vaguely patterned with darker brown, prearcular field yellowed; macrotrichia of veins very sparse, restricted to the outer veins; elements comprising the cord in virtual transverse alignment, including the free tip of Sc_2 and all elements of the anterior cord.

Sex uncertain. — Wing 5.3 mm. Rostrum and mouthparts brown, the former nearly one-third the remainder of head. Head brown.

Thorax almost uniformly medium brown, the dorsum very slightly darker, praescutum and scutal lobes vaguely gray pruinose. Halteres dark brown, the extreme base of stem paler. Legs with coxae and trochanters yellow, the remainder virtually of the same color. Wings (Fig. 12) tinged with brown, with vague slightly darker clouds over the cord and *m-cu*; anterior prearcular field and the costal region pale yellow, margins of outer radial cells weakly darkened; slightly more whitened areas at fork of *M* and in outer end of cell R_5 , veins brown, paler in the prearcular field. Costa with very sparse trichia on proximal third, more abundant outwardly; trichia of veins very sparse, including a short series on R_1 , longer and more abundant on vein R_{4-5} and outer ends of all medial branches. Venation: Elements comprising the cord in virtual transverse alignment, including the free tip of Sc_2 at costa and all other veins back to the fork of *M*; veins R_{2-3} and basal section of M_{1-2} very short to virtually lacking; M_{3-4} and M_4 subequal; *m-cu* about opposite midlength of *Rs*.

Abdomen brown, the sternites slightly paler; outer segments broken.

Holotype, Sex? Grajahu, Rio de Janeiro, Brazil, April 20, 1940 (Lopes and Oliveira). Paratopotype, a broken specimen, sex uncertain.

The most evident characters for the separation of this fly from related species are in the venation, particularly the virtually transverse alignment of the veins that comprise the cord. The most similar fly is *Orimarga (Orimarga) perpallens* Alexander, of Jamaica, which differs in details of venation and vein trichiation. The discovery of better preserved males of the present species should reveal distinctive hypopygial characters.

Hexatomini

14. *Austrolimnophila (Limnophilella) multipicta* Alexander

Austrolimnophila (Limnophilella) multipicta Alexander; Rev. de Entomologia, 10: 433-434, fig. 3 (venation); 1939.

This attractive fly has been known only from southeastern Brazil (Sao Paulo to Santa Catharina). The present record from Argentina is based on the female sex but there appears to be no doubt concerning the identification.

Argentina: Alpachiri, Tucuman, altitude 1000 meters, October 1, 1968 (Luis E. Pena).

15. *Shannonomyia dilatistyla* sp. n.

General coloration of body brown or brownish gray; antennae brown; wings uniformly light brownish yellow, prearcular and costal fields clearer pale yellow, stigma only vaguely indicated; R_{2-3-4} long, subequal to or exceeding R_3 ; male hypopygium with outer dististyle expanded outwardly, apex obliquely truncate, outer point blackened; gonapophyses unusually large, very strongly curved, extended into needlelike points.

Male. — Length about 6.5 mm.; wing 6.8 mm.; antenna about 1.2 mm. Rostrum, palpi and antennae brown, the last short; flagellar segments oval, the more proximal ones with lower face slightly produced, normal vestiture very short and delicate. Head brown.

Thorax damaged in available material, the dorsum apparently light brownish gray, more yellowed posteriorly above and on the pleura. Halteres whitened, apex of knob infuscated. Legs with coxae and trochanters yellowed, remainder broken. Wings (Fig. 18) almost uniformly light brownish yellow, prearcular and costal fields clearer pale yellow, stigma only vaguely indicated; veins brownish yellow. Longitudinal veins beyond cord and distal ends of R_s , basal section of Cu_1 and 2nd A with trichia. Venation: R_{2-3-4} long, subequal to or exceeding R_3 ; R_2 very faint, at or before the radial fork; cell 1st M_2 subequal in length to vein M_4 , $m-cu$ opposite or just beyond one-third the length of cell.

Abdominal tergites dark brown, sternites paler brown, eighth and ninth segments more yellowed; styli of hypopygium brown. Male hypopygium (Fig. 20) with outer dististyle, d , expanded outwardly, the apex obliquely truncate, outer point blackened; inner style slender on outer half. Phallosome, p , with gonapophyses, g , unusually large, very strongly curved, extended outwardly into a long needlelike point; aedeagus slender, base not convoluted, subtending sclerites conspicuous.

Holotype, ♂, Salesópolis, Boracéia, São Paulo, Brazil, July 22, 1947 (Rabello, Dante and Travassos Filho). Paratopotype, Sex?

In its virtually unpatterned wings the present fly suggests species such as *Shannonomyia erubescens* Alexander and *S. paraguayensis* Alexander, differing from all regional species in the hypopygial characters, especially the outer dististyle and gonapophyses.

16. *Shannonomyia exilostyla* sp. n.

General coloration of thorax light brown; antennae of male very long, about two-thirds the wing, flagellar segments elongate-cylindrical with abundant erect elongate setae, the longest about three times the diameter at their point of insertion; wings light brown, stigma small, brown, very inconspicuous; male hypopygium with outer dististyle unusually short, about one-third longer than the inner style.

Male. — Length about 5.5-6 mm.; wing 4.8-5 mm.; antenna about 3-3.6 mm. Rostrum brownish black, palpi black. Antennae of male elongate, about two-thirds the wing, dark brown; flagellar segments very long-cylindrical, with abundant erect unusually long yellow setae, the verticils not clearly differentiated from the setae; longest setae about three times the diameter of the segment. Head brownish gray.

Thoracic dorsum almost uniformly light brown, virtually unpatterned, pleura more yellowed. Halteres with stem pale, knob weakly darkened. Legs with coxae and trochanters yellow, remainder brown. Wings (Fig. 19) light brown, prearcular and costal regions more saturated; stigma small and inconspicuous, brown; veins brown. Macrotrichia on longitudinal veins beyond general level of origin of R_s , lacking on certain elements as R_{2-3-4} and proximal sections of M_{1-2} , in holotype present but sparse on R_s , lacking in the paratype. Venation: Sc_1 ending shortly before fork of R_s , R_{2-3-4} relatively long, about three times the basal section of R_5 ; vein R_4 long, generally parallel with R_5 throughout its length, cell R_3 at margin very extensive, nearly four times R_2 ; $m-cu$ at or near one-third to midlength of M_{3-4} .

Abdominal tergites dark brown, basal sternites paler brown. Male hypopygium (Fig. 21) with the outer dististyle, d , very short, only about one-third longer than the inner style, unequally bidentate at apex, inner style with several erect to slightly retrorse setae. Aedeagus relatively small, only moderately flattened; gonapophyses, g , with outer spine long and slender.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, at light, May 13, 1954 (Gordon Field). Paratopotype, male, at yellow light, May 12, 1954.

The chief distinguishing character of the present fly is the unusually long male antennae with dense erect setae on the flagellar segments. The most similar single species is *Shannonomyia dampfi* Alexander, of southern Mexico which has the flagellar setae even longer and more conspicuous than in the present fly and with the hypopygial structure distinct. Other species with the antennae somewhat the same but with strong macrotrichia in the outer wing cells include *S. myersiana* Alexander, of Jamaica, and *S. olssoni* (Alexander), of Panama.

17. *Shannonomyia lipernes* sp. n.

General coloration of thorax buffy, praescutum with three slightly more darkened stripes, with a capillary darker brown central line; antennae with setae of flagellar segments moderately long, pale and inconspicuous; knobs of halteres darkened; legs yellow, tarsi and extreme tips of tibiae light brown; wings brownish yellow, stigma small and inconspicuous; male hypopygium with aedeagus slightly compressed-flattened, gonapophyses long and slender.

Male. — Length about 5-5.3 mm.; wing 5-6 mm.; antenna about 1.2-1.4 mm. Female. — Length about 7 mm.; wing 6.5 mm. Rostrum brown, palpi dark brown. Antennae with scape and pedicel yellow, flagellum brown; flagellar segments long-oval with truncated ends, setae of moderate length, pale and inconspicuous. Front and central area of vertex light gray, the sides light brown.

Pronotum light brown, pretergites yellow. Mesonotum almost uniformly buffy brown, praescutum with three slightly darkened stripes, with a capillary darker brown central vitta, narrower but evident on scutum and scutellum, postnotum dusted with gray. Pleura brownish yellow. Halteres light yellow, apices of knobs slightly darkened. Legs with coxae and trochanters light yellow; remainder of legs yellow, extreme tips of tibiae and outer tarsal segments light brown. Wings brownish yellow, prearcular and costal fields clear yellow, stigma small and inconspicuous, pale brown; veins light brown. Macrotrichia on longitudinal veins beyond general level of origin of *Rs*. Venation: *Sc* relatively long, *Sc*₁ ending a short distance before fork of *Rs*; *R*₂ close to outer fork of *Rs*, *R*₃ strongly upcurved; *m-cu* from about one-fourth to near midlength of *M*₃₋₄.

Abdominal tergites brown, sternites paler, subterminal segments darker; hypopygium yellowed, appendages brown. Male hypopygium (Fig. 22) with tergite, *t*, conspicuously emarginate, lobes glabrous, obtuse. Outer dististyle, *d*, narrow, the slender apical spine black; inner style about two-thirds to three-fourths as long as outer. Phallosome, *p*, with gonapophyses, *g*, long and

slender; aedeagus slightly compressed-flattened, basal spine broad, extended into a long point.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, at red light, May 20, 1954 (Gordon Field). Allotopotype, ♀. Paratopotypes, several ♂♂ at red and blue lights, April 13 and May 12-20, 1954.

Shannonomyia lipernes is generally similar to other regional species, differing in the general coloration of the body, legs and wings, antennal length and vestiture, and in the hypopygial details. The most similar such species include *S. argenteiceps* Alexander, *S. atropicalis* Alexander, and *S. setulicornis* sp. n.

18. *Shannonomyia microstyla* sp. n.

General coloration of thorax buffy yellow, the darkened pattern more reddened; antennae with scape and pedicel light yellow, flagellar segments long-oval, light brown with yellow bases; halteres and legs yellow; wings yellowish white, restrictedly patterned with brown, the oval stigma darker brown; male hypopygium with inner dististyle very reduced, appearing as a small glabrous blade that is about one-fourth the length of the outer style.

Male. — Length about 6 mm.; wing 6.5 mm.; antenna about 1.3 mm.

Rostrum and palpi black. Antennae with scape and pedicel light yellow, flagellar segments light brown with yellow bases, outer segments more uniformly yellowed; segments long-oval, subequal to their longest verticils. Head above light silvery gray, sides of genae and posterior vertex pale brown.

Thorax extensively pale buffy yellow, praescutum with three slightly more reddened stripes, humeral region yellowed; centers of scutal lobes reddened; posterior sclerites of notum buffy yellow, scutellum with a vague darker central line. Pleura yellow, slightly darker above. Halteres pale yellow. Legs with all coxae and trochanters light yellow, remainder of legs uniformly darker yellow. Wings yellowish white, prearcular and costal fields clear light yellow; a restricted darker pattern, including the conspicuous oval brown stigma and paler brown seams at origin of *Rs*, cord and outer end of cell *1st M*₂; veins yellow, brown in the patterned areas. Longitudinal veins beyond level of origin of *Rs* with trichia. Venation: *Sc*₁ opposite two-thirds *Rs*, *Sc*₂ near its tip; *R*₂ close to fork of *R*₂₋₃₋₄; vein *R*₄ long, deflected slightly caudad so cell *R*₃ at margin is extensive, about three times *R*₂; *m-cu* about one-half its length beyond fork of *M*.

Abdomen light brown. Male hypopygium (Fig. 23) with

outer dististyle, *d*, unequally bifid at apex; inner style greatly reduced in size, appearing as an elongate blade that is virtually without setae, its length only about one-fourth that of the outer style. Phallosome, *p*, with the gonapophyses, *g*, slender, gently curved; aedeagus, *a*, a relatively broad compressed-flattened blade, the outer end conspicuously narrowed, at its base with a very slender curved spine subequal in length to the gonapophyses but more slender.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, May 11, 1954 (Gordon Field).

In its general appearance the present fly is similar to *Shannonomyia argenteceps* Alexander and some allied species, being most readily separated by hypopygial characters especially the reduced inner dististyle which is smaller than in any other of the presently known Neotropical members of the genus.

19. *Shannonomyia setulicornis* sp. n.

General coloration of thorax yellowed, praescutum and scutal lobes patterned with light brown; antennae with scape and pedicel yellow, flagellum black, the segments oval, provided with abundant dense erect setulae; knobs of halteres brown; legs yellow; wings yellowish brown, restrictedly patterned with pale brown; male hypopygium with outer dististyle relatively short and stout.

Male. — Length about 4.5 mm.; wing 5 mm.; antenna about 1.8 mm. Rostrum dark brown, palpi brownish black. Antennae with scape and pedicel clear light yellow, flagellum black; flagellar segments oval, narrowed at ends, surface with abundant erect setulae, the longest about one-fourth as long as the verticils or the diameter of the segment at the point of insertion. Head light gray anteriorly, more brownish gray behind; anterior vertex broad, nearly three times the diameter of the scape.

Pronotum and pretergites yellow. Mesonotal praescutum yellow with three light brown stripes, each scutal lobe extensively of this color, remainder of notum brownish yellow, vaguely dusted with gray. Pleura brownish yellow. Halteres long, stem brownish yellow, the small knob dark brown. Legs with coxae and trochanters yellow; remainder of legs slightly more brownish yellow, apex of tibia vaguely darker; tarsi of type broken. Wings yellowish brown, prearcular and costal fields clearer yellow; stigma pale brown; narrow paler brown seams at origin of *Rs*, cord and outer end of cell *1st M*₂; veins light yellow. Longitudinal veins beyond general level of outer end of cell *1st M*₂ with

macrotrichia. Venation: Sc relatively long, Sc_1 ending shortly beyond fork of R_s , Sc_1 and Sc_2 subequal; R_2 beyond fork of R_{2-3-4} , slightly shorter than R_{1-2} ; $r-m$ strongly arcuated; cell 1st M_2 small, $m-cu$ at near two-thirds M_{3-4} .

Abdominal tergites dark brown on sides, more obscure yellow on central parts, sternites yellow. Male hypopygium (Fig. 24) with outer dististyle, d , relatively short and stout, the apex unequally bidentate, axial spine stouter; inner style about two-thirds to three-fourths the outer, distal half narrowed, apex obtuse. Phallosome, p , with aedeagus relatively long, more than basal half only slightly expanded, subtending basal spine nearly straight; gonapophyses, g , with base dilated, more than outer half a slender spine.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, at red light, May 13, 1954 (Gordon Field).

The only other regional species with somewhat comparable dense setulae on the flagellar segments is *Shannonomyia protuberans* Alexander, of Morelos, Mexico. This differs in the larger size, virtually unpatterned wings, the longer uniformly darkened antennae, and the longer and more slender outer dististyle of the hypopygium.

20. *Hexatoma (Eriocera) euryxantha* sp. n.

Allied to *saga*; mesonotum gray, praescutum with three polished black stripes; head with vertical tubercle orange; halteres and legs black; wings cream colored, conspicuously patterned with dark brown, including the prearcular field, costal region, stigma and wing tip, with seams over cord and outer end of cell 1st M_2 ; veins behind R glabrous; abdomen elongate, black, segments two to five inclusive chiefly yellow, each with about the outer third black.

Male. — Length about 15.5 mm.; wing 11 mm.; abdomen alone about 12 mm.; antenna about 2.7 mm. Rostrum and palpi brownish black. Antennae of male 7-segmented; scape black above, yellowed beneath, pedicel brown, flagellum black; flagellar segments long-cylindrical, the first exceeding the combined second and third, terminal segment about three-fourths the penultimate. Front blackened; remainder of head above black, sparsely pruinose, the large vertical tubercle orange, with a narrow line extended caudad into the occiput; tubercle appearing bilobed to form two smaller obtuse elevations.

Prothorax light gray. Mesonotal praescutum with three polished black stripes, their posterior ends dulled by brown pollen that also involves the posterior interspaces, median stripe broad in front, laterals outcurved to the margin, humeral region and

a lateral area before suture gray pruinose; scutum blackened on sides and anteriorly near suture, more pruinose behind; scutellum blue gray, parascutella and mediotergite blackened, the latter with a basal triangular gray area. Pleura dark brown, variegated by patches of light gray. Halteres black. Legs with coxae black, pruinose; trochanters and remainder of legs black. Wings faintly cream colored, conspicuously patterned with dark brown, including the prearcular field, cells *C* and *Sc*, and the stigma; further narrower brown seams at wing tip, cord, outer end of cell *1st M*₂, and as a seam in cell *M* along basal half of vein *Cu*; veins brown. Veins behind *R* glabrous. Venation: *Sc*₁ ending opposite *r-m*; *R*₂₋₃₋₄ subequal to vein *R*₃; *m-cu* shortly beyond the fork of *M*.

Abdomen elongate; first segment black, succeeding four segments chiefly yellow with about the outer third of each blackened, outer segments dull black.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, April 8, 1954 (Gordon Field).

Hexatoma (Eriocera) euryxantha is most similar to *H. (E.) saga* Alexander, differing especially in the heavy darkened wing pattern and unusually broad yellow rings on the intermediate abdominal segments.

21. *Atarba (Ischnothrix) polypila* sp. n.

General coloration brownish gray, praescutal stripes faintly indicated; antennae bicolored, proximal flagellar segments brownish black with yellow apices; legs yellow, fore femora with a pale brown subterminal ring; wings yellow, restrictedly patterned with dark brown on the veins and with abundant pale brown spots in cells behind *Sc*, vein *R*₃ erect.

F e m a l e. — Length about 7 mm.; wing 7.8 mm.; antenna about 2.3 mm. Rostrum brownish yellow, first segment of palpus brownish yellow, remainder black. Antennae with scape, pedicel and first segment of flagellum yellow, succeeding segments bicolored, brownish black, apex narrowly yellow, the amount of the latter decreasing on outer segments. Head brownish gray, vertex with a narrow dark brown central line.

Thoracic dorsum almost uniformly dull brown, light gray pruinose, praescutum with four faintly indicated pale brown stripes, centers of scutal lobes similarly darkened; setae of praescutal interspaces very long, erect. Pleura light gray, vaguely patterned with light brown. Halteres with stem yellow, knob pale brown. Legs with coxae and trochanters yellow, fore coxae slightly more darkened; remainder of legs yellow, fore femora with

indications of a pale brown subterminal ring; outer tarsal segments slightly infuscated. Wings (Fig. 25) with ground yellow, costal border clear light yellow; narrow dark brown seams at origin of R_s , cord, outer end of cell $1st\ M_2$, stigma, and vein R_3 , together with marginal darkenings at ends of all longitudinal veins excepting Sc ; abundant very pale brown spots in all cells behind Sc and R_1 , some of the markings confluent; veins yellow, brown in the heavily patterned areas. Macrotrichia on R_s and the longitudinal veins beyond cord, including also the outer ends of basal section of Cu_1 and $2nd\ A$. Venation: Sc_1 ending shortly beyond one-third the length of R_s , Sc_2 shortly removed; vein R_3 erect; $m-cu$ at or just before the fork of M .

Abdominal tergites yellowed basally and on sides, posterior borders slightly more darkened, sternites and outer segments light yellow. Ovipositor with cerci slender, dark brown, slightly upcurved; basal plate with very long setae.

Holotype, ♀, Boracéa, São Paulo, Brazil, July 24, 1942 (Rabello, Dante and Travassos Filho).

The most similar species is *Atarba (Ischnothrix) berthae* Alexander, likewise from Southeastern Brazil, which differs evidently in the coloration of the legs and wings.

22. *Elephantomyia (Elephantomyia) laticincta* sp. n.

Size large (wing 8 mm. or more); rostrum subequal in length to body or wing; mesonotal praescutum obscure yellow with a central darkened stripe, pleura yellow with a transverse brown girdle on mesopleura, including also the middle coxae; femora yellow, tips narrowly black, preceded by a subequal clearer yellow ring, tarsi clear yellow; wings strongly suffused with brown, cells C and Sc , with the stigma, more conspicuously so; abdomen of male yellowed, segments six to eight dark brown to form a broad ring; male hypopygium with the gonapophysis a nearly straight flattened horn that narrows to a slender straight spine.

Male. — Length, excluding rostrum, about 8-9 mm.; wing 8-8.5 mm.; rostrum alone 8.5-9 mm. Female. — Length, excluding rostrum, about 10-11 mm.; wing 8-10 mm.; rostrum alone 10-10.5 mm. Rostrum light to darker brown, elongate, subequal to body or wing. Antennae brown. Head light brown; anterior vertex narrow, especially in male, much less than the diameter of scape.

Pronotum yellow, narrowly brown medially. Mesonotum obscure yellow with a central brown stripe that narrows behind, becoming obsolete before suture; posterior sclerites of notum

brownish yellow to darker brown. Pleura yellow with a narrow transverse brown girdle on mesopleura, extending from dorso-pleural region to the middle coxae. Halteres weakly darkened, base of stem yellow. Legs with coxae yellow except as described, trochanters yellow; femora yellowed, tips narrowly but conspicuously black, preceded by a subequal or slightly broader clearer yellow ring; tibiae brownish yellow, tarsi clearer yellow; spurs on middle and hind tibiae, lacking on fore pair. Wings (Fig. 26) strongly suffused with brown, cells C and Sc more evidently so, stigma darker brown; very narrow brown seams over cord and outer end of cell 1st M_2 , wing tip slightly more darkened; veins brown. Venation: Sc_1 ending nearly opposite fork of the short R_s , branches of the latter parallel to one another throughout, cell R_2 at margin about two and one-half times cell R_5 ; $m-cu$ subequal to distal section of Cu_1 , at near midlength of cell 1st M_2 ; cell 2nd A broader than in *luteiannulata*. Some specimens that are assigned to the present species have R_s slightly longer and may represent a further species.

Abdomen of male with tergites yellowed, with a narrow brown central line, segments six to eight inclusive dark brown to form a broad ring, hypopygium light yellow. In female, abdominal tergites yellow, the central darkened stripe more continuous, sternites with lateral and central darkenings, the latter extensively broken to form isolated spots at posterior border, somewhat more extensive in the paratypes. Male hypopygium (Fig. 27) with tergal border, t , with two small lobes separated by a shallow V-shaped emargination. Outer dististyle, d , slightly shorter than the inner style, apex unequally bidentate, axial point stouter. Phallosome, p , with each gonapophysis a nearly straight flattened horn, broad at base, narrowed to a slender straight spine: aedeagus with penefilum very long and slender.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, at light, April 4, 1954 (Gordon Field). Allotopotype, ♀, pinned with type. Paratopotypes, ♂ ♀, April 2 — May 30, 1954.

The coloration of the legs, especially the femoral pattern, is much as in *Elephantomyia* (*Elephantomyia*) *luteiannulata* Alexander which differs evidently in size, venation, and general coloration, including the thoracic pleura.

23. *Elephantomyia* (*Elephantomyia*) *multizona* sp. n.

Size small (wing of male less than 5 mm.); rostrum slightly longer than the wing; mesonotum and pleura yellow, praescutum, scutellum and mediotergite extensively pale brown, pleura with mesepisternum dark brown to form a conspicuous girdle; legs brown; wings pale brown, stigma elongate, darker brown; veins beyond cord with macrotrichia; intermediate abdominal tergites conspicuously dimidiate, basal half brown, apices yellow, segment eight dark brown to produce a conspicuous ring; male hypopygium with each gonapophysis a gently sinuous narrow blade that narrows to a nearly acute point, penefilum long and conspicuous.

Male. — Length, excluding rostrum, about 5.5 mm.; wing 4.7 mm.; rostrum about 5 mm. Rostrum nearly as long as remainder of body, brown. Antennae with scape and pedicel light brown; flagellum broken. Head light gray, posterior vertex and occiput pale brown; anterior vertex narrow, about one-half the diameter of scape.

Cervical region dark brown, pronotum yellow, slightly darker medially. Mesonotum light yellow, praescutum with a pale brown central stripe, scutellum and mediotergite light brown. Pleura yellow, mesepisternum dark brown except posteriorly, forming a broad transverse girdle. Halteres yellow, knob dark brown. Legs with coxae and trochanters light yellow, remainder of legs brown, including the tarsi. Wings pale brown, stigma elongate, darker brown; veins brown. Longitudinal veins beyond cord, including *Rs*, with macrotrichia. Venation: *Sc*₂ ending about opposite four-fifths *Rs*, branches of the latter gently divergent, cell *R*₂ at margin slightly more extensive than cell *R*₄; *m-cu* shortly before midlength of *M*₃₋₄, longer than the distal section of *Cu*₁.

Abdomen with proximal tergites yellowed, weakly darkened medially, tergites three to six conspicuously bicolored, basal half brown, apex yellow; tergite seven brown with lateral borders narrowly yellow, segment eight dark brown to form a conspicuous ring; sternites and hypopygium yellowed. Male hypopygium (Fig. 28) with outer dististyle, *d*, short, broad-based, apex unequally bispinous, axial spine stouter, curved. Gonapophysis, *g*, a gently sinuous narrow blade, outer end narrowed to a nearly acute point; penefilum long and conspicuous.

Holotype, ♂, Camp Pina, Panama, April 29, 1954 (Field).

There are various other generally similar regional species, the most similar being *Elephantomyia* (*Elephantomyia*) *cinctiventris* Alexander, which differs in hypopygial structure, especially the gonapophyses. *E.* (*E.*) *scimitar* sp. n., has the hypopygium generally the same, differing in details, including the outer dististyle.

24. *Elephantomyia (Elephantomyia) orthorhabda* sp. n.

Size relatively large (wing of male 9.5 mm.); mesonotum yellowed, pronotum and praescutum darkened medially, pleura uniformly yellow; wings very faintly tinged with brown, stigma pale brown; abdomen yellowed, tergites with a narrow central brown stripe, segment eight uniformly dark brown to form a narrow ring; male hypopygium with base of gonapophysis oval, narrowed outwardly into a straight spine, its tip a recurved pale filament.

Male. — Length, excluding rostrum, about 9.5 mm.; wing 9.5 mm.; rostrum about 8 mm. Rostrum dark brown, slightly shorter than remainder of body. Antennae with proximal three segments light brown, remainder darker brown, elongate, with long verticils. Head brownish yellow, anterior vertex narrower than diameter of scape, gray pruinose.

Pronotum yellow, with a narrow dark brown central stripe. Mesonotum yellowed laterally, praescutum with a central brown stripe, darkest on anterior third; scutellum and central part of mediotergite pale brown, parascutella yellowed. Pleura uniformly yellow. Halteres with stem yellow, knob brown. Legs with coxae and trochanters yellow; remainder of legs broken. Wings very faintly tinged with brown, prearcular and costal fields more yellowed, stigma long, pale brown; veins brown. Macrotrichia on longitudinal veins beyond general level of origin of *Rs*, present on outer half of *2nd A*, lacking on *1st A*. Venation: *Sc* relatively long, *Sc*₁ ending about opposite *r-m*, *Sc*₂ near its tip; branches of *Rs* generally parallel to one another, slightly more approximated on outer third; *m-cu* shortly before midlength of *M*₃₋₄.

Abdominal tergites yellowed, with a narrow brown virtually continuous central stripe, posterior borders of tergites six and seven darkened, segment eight uniformly dark brown, sternites and hypopygium yellow. Male hypopygium (Fig. 29) with both dististyles, *d*, nearly equal in length, outer style slender, apex unequally bidentate. Phallosome, *p*, with base of each gonapophysis oval, narrowed into a straight spine, its tip a recurved pale filament; aedeagus with base narrow, penefilum long and coiled.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, April 6, 1954 (Gordon Field).

Other generally similar regional species include *Elephantomyia (Elephantomyia) laticincta* sp. n. and *E. (E.) scimitar* sp. n., which differ especially in coloration of the body and in details of the male hypopygium, particularly the phallosome.

25. **Elephantomyia (Elephantomyia) scimitar** sp. n.

Size medium (wing to 7.5 mm.); rostrum of male subequal in length to remainder of body; thoracic pleura yellow, mesepisternum conspicuously brownish black not involving the mid-coxae; legs with femora light brown, apices narrowly darker brown, preceded by an inconspicuous yellow ring; wings faintly infuscated, stigma pale brown; abdominal tergites light brown, eighth segment darker brown to form a narrow ring; male hypopygium with each gonapophysis long and slender, narrowed gradually to the obtuse tip; aedeagus with penefilum very long and slender.

Male. — Length, excluding rostrum, about 5-6 mm.; wing 5.3-7.5 mm.; rostrum about 4.5-5.5 mm. Female. — Length about 7.5-8 mm.; wing 6.5-7 mm.; rostrum about 5.5-6 mm. Rostrum dark brown, subequal to body. Antennae 15-segmented, brown; fusion segment of flagellum oval, succeeding segments long-oval, verticils very long. Head light gray; anterior vertex very narrow.

Prothorax yellow, darkened medially above. Mesonotum brownish yellow, praescutum with a central darkening, darkest at extreme cephalic border, pale behind. Pleura yellow, conspicuously patterned with polished dark brown black, this involving the mesopleural anepisternum except posteriorly, not including the mid-coxae. Halteres with stem yellow, clearer basally, knob weakly darkened. Legs with all coxae and trochanters yellow; femora light brown, tips narrowly darker brown, preceded by a broader inconspicuous more yellowed ring; tibiae light brown, tarsi paler. Wings faintly infuscated, costal border scarcely more darkened; stigma long-oval, pale brown; veins brown. Longitudinal veins beyond cord with macrotrichia. Venation: Sc_1 ending some distance before fork of Rs ; $m-cu$ at or before midlength of M_{3-4} ; cell 2nd A broader than in *luteiannulata*.

Abdominal tergites light brown, sternites paler; eighth segment darker brown to form a narrow ring. Male hypopygium (Fig. 30) with long and delicate setae on mesal face of basistyle, *b*. Outer dististyle, *d*, shorter than the inner, conspicuously bidentate at apex, axial spine strongly curved. Phallosome, *p*, with gonapophysis beyond base long and slender, narrowed to the obtuse pale membranous apex; aedeagus narrow, penefilum very long and slender, coiled.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, at light, May 11, 1954 (Gordon Field). Allotopotype, ♀, pinned with type. Paratopotypes, ♂ ♀, April 4 — May 30, 1954.

In the coloration of the thoracic pleura and femora the present fly suggests species such as *Elephantomyia* (*Elephantomyia*) *laticincta* sp. n. and *E. (E.) luteiannulata* Alexander, differing in the pattern of the thoracic pleura, femora, wings, and abdomen, as well as in hypopygial details, especially the phallosome.

Eriopterini

26. *Eugnophomyia incurvata* sp. n.

Size large (wing of male 9 mm.); body and appendages black; wings with abundant trichia in outer cells; male hypopygium with dististyle bifid; phallosome with aedeagus slender, bent at outer fourth, apophyses appearing as flattened blades, their apices incurved and decussate at the midline.

Male. — Length about 8.5 mm.; wing 9 mm.; antenna about 2.2 mm. Body and appendages dull black, the dorsopleural membrane slightly paler, brown. Antennae with proximal five or six flagellar segments with dense erect light setae, shorter than the sparse verticils, outer segments elongate, subequal to their longest verticils.

Wings (Fig. 31) with abundant trichia in stigmal region and in the cells beyond general level of outer end of cell *1st M*₂, much sparser in outer ends of cells *Cu* and *1st A* (in figure their position indicated by stippling). Wings strongly blackened, especially the stigma and prearcular and costal fields. Venation: *R*₂ immediately before radial fork, subequal to *R*₂₋₃₋₄.

Male hypopygium (Fig. 36) with apical lobe of basistyle, *b*, long, narrowed to the obtuse tip, the margins with long conspicuous setae. Dististyle, *d*, bilobed, the longer blade cultrate, outer surface of style with conspicuous long setae. Phallosome, *p*, with gonapophyses appearing as flattened blades, outwardly narrowed into slender points that are incurved, decussate across the midline; aedeagus elongate, outer fourth gradually narrowed and bent at a right angle.

Holotype, ♂, S. Cabeceiras, m'boy Guassu Campos, São Paulo, Brazil, December 18, 1940 (D'Amico).

The present fly is generally similar to other regional black large-sized species, all differing among themselves chiefly in hypopygial structure. Such further species include especially *Eugnophomyia funebris* (Alexander), *E. funerea* (Alexander), *E. melancholica* (Alexander) and *E. pammelas* (Alexander).

27. *Trentepohlia (Paramongoma) pallidistigma* sp. n.

Size relatively large (wing about 5.5 mm. or more); general coloration of thorax brownish yellow to yellow, praescutum in cases with a central darkened stripe; legs pale brownish yellow; wings faintly tinged with brown, prearcular and costal fields more yellowed, stigma pale, partially obliterating the included veins; veins R_{2-3-4} and R_{3-4} subequal, veins R_3 and R_4 strongly divergent, cell R_2 at margin about two-thirds to three-fourths cell R_3 ; male hypopygium with a flattened dusky blade near proximal end of basistyle.

Male. — Length about 5-5.5 mm.; wing 5.5-6 mm. Female. — Length about 6-6.5 mm.; wing 6-6.2 mm. Rostrum obscure yellow, palpi brownish black. Antennae with scape yellowed, remainder black; flagellar segments long-oval, with abundant short white setulae and sparse black verticils. Head yellow to brownish gray; anterior vertex reduced to a capillary line.

Mesonotum brownish yellow to clearer yellow, praescutum vaguely more darkened medially, in some specimens better defined and widened posteriorly. Pleura clear yellow. Halteres obscure yellow, in some specimens with the knob more darkened. Legs with coxae and trochanters yellow; remainder of legs pale brownish yellow. Wings (Fig. 32) faintly tinged with brown, prearcular and costal fields more yellowed; stigma pale, the included veins partially obliterated; remaining veins light brown, those of outer medial field paler. Venation: R_{2-3-4} and R_{3-4} subequal, veins R_3 and R_4 strongly divergent, R_3 oblique, cell R_2 at margin about two-thirds to three-fourths cell R_3 ; $m-cu$ at or close to fork of M ; cell *2nd A* relatively narrow.

Abdominal tergites dark brown, sternites more yellowed, especially the more proximal ones, hypopygium yellowish brown. Ovipositor with cerci long and very slender, very gently upcurved at outer end. Male hypopygium with tergite subquadrate, posterior border with a narrow U-shaped emargination, the broad lateral lobes obliquely truncated, their extreme outer angles narrowly obtuse. Basistyle with a flattened dusky lobe or blade at proximal end of upper face, this directed dorsad. Dististyle with beak long and straight, tip obtuse, lower beak short, very obtuse.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, at light, April 20, 1954 (Gordon Field). Allotype, ♀, Cerro Punta, Chiriqui, altitude 6200 feet, April 19, 1954. Paratopotypes, ♂ ♀, with holotype; paratypes, ♂ ♂, with allotype.

The most similar regional species include *Trentepohlia* (*Paramongona*) *flavella* Alexander and *T. (P.) longifusa* (Alexander) which have the venation much the same. The body coloration and especially the wings appear to separate the fly from *longifusa* which was described from eastern Brazil and which seems to be known only from the type material.

Gymnastes Brunetti

Gymnastes Brunetti; Records of the Indian Museum, 6: 281; 1911. Type: — *cyaneus* (Edwards), as *violacea* Brunetti (Oriental).
Subgenus *Paragymnastes* Alexander; Proc. Linn. Soc. New South Wales, 47: 583; 1922. Type: — *fascipennis* (Thomson) (Australasian).

A single species, *perexquisitus* Alexander, has been known from the New World. This had been assigned to the above genus and subgenus but upon further study is considered to represent a new subgenus that is described at this time.

Subgenus *Neogymnastes* new

Characters generally as in the two previously defined subgenera, differing in venational and hypopygial features.

Wings (Fig. 33) with the radial field distinctive, there being four radial branches, with elements R_2 , R_{2-3-4} and R_5 in nearly transverse alignment; Sc long, Sc_1 ending opposite fork of Rs . Medial field virtually as in the typical subgenus. Legs and various wing veins with flattened scales, additional to the normal setae. Male hypopygium (Fig. 37) with basistyle, b , on mesal face with a group of four or five strong spinoid setae. Dististyles, d , terminal in position, outer style unequally bifid, the lower arm a flattened blade, upper arm extended into a lobe that is tipped with a brush of unusually long setae; inner style a narrow swordlike blade, these decussate across the midline. Phallosome, p , a broad depressed-flattened plate, apex convexly rounded.

Type. — *Gymnastes* (*Neogymnastes*) *perexquisitus* Alexander. Neotropical: Southeastern Brazil (Minas Geraes, São Paulo, Santa Catharina).

The present fly is the only representative in the New World, the others being Palaeotropical, chiefly Oriental and Australasian, with fewer species in the Ethiopian and southern parts of the eastern Palaearctic regions. The method by which the number of radial branches of the wing has been reduced from the generalized four to three in typical *Gymnastes* has been considered in the Alexander 1922 reference above cited. The venation of the three subgenera now known is shown for comparison with the present fly (Figs. 33, 34, 35).

28. **Teucholabis (Teucholabis) noctula** sp. n.

General coloration of body brownish black; femora obscure yellow, tips black; wings very weakly darkened, stigma small, subcircular, pale brown, Sc_1 ending about opposite midlength of R_s , cell M_2 open by atrophy of basal section of vein M_3 ; male hypopygium with basistyle unarmed; outer dististyle a simple rod, the outer fourth narrowed into a spine; aedeagus terminating in a slender curved spine, lower surface with about ten long setae.

Male. — Length about 5.5 mm.; wing 4 mm. Rostrum black, relatively long, slightly exceeding three-fourths the remainder of head; palpi black. Antennae relatively short, black; proximal flagellar segments very short-oval to subglobular, outer segments slightly longer. Head brownish black.

Thorax almost uniformly brownish black. Halteres brownish black. Legs with coxae brownish black, trochanters yellowish brown; femora obscure yellow, tips gradually and rather broadly blackened, on midleg including about the outer fourth, hind legs the outer sixth; tibiae brown, tips and the tarsi black; posterior tibiae more brownish yellow, posterior basitarsi slightly dilated on proximal fourth (fore legs broken). Wings very weakly darkened, prearcular and costal fields slightly more whitened; stigma small, subcircular, pale brown; veins brown. R_s and longitudinal veins beyond cord with abundant macrotrichia. Venation: Sc relatively long, Sc_1 ending about opposite midlength of R_s , Sc_2 retracted; R_2 slightly longer than R_{2-3-4} , R_{1-2} shorter; branches of R_s only weakly divergent, cells R_2 and R_4 at margin subequal in extent; cell M_2 open by atrophy of basal section of M_3 ; $m-cu$ two-thirds its length beyond fork of M .

Abdomen black. Sternal pocket of segment five small, comprised of relatively few setae, none modified. Male hypopygium (Fig. 40) with basistyle, b , lacking a spine. Outer dististyle, d , a simple rod, very slightly expanded at near midlength, the outer fourth narrowed into a slender spine; inner style curved, outer end slightly expanded, terminating in a short point, at near one-third the length on the lower or concave part with a small cylindrical lobe that is tipped with few setae. Aedeagus, a , terminating in a slender curved spine, the lower surface of body with about ten long setae.

Holotype, ♂, New Taboga Village, Panama, December 11, 1953 (Gordon Field).

Rather numerous regional species of the genus have cell M_2 of the wings open as in the present, all differing in body coloration and in details of hypopygial structure. In the latter respect the species is similar to *Teucholabis* (*Teucholabis*) *jocosa* Alexander which has the body coloration different and with cell *1st* M_2 of the wings present.

29. *Teucholabis* (*Teucholabis*) *subclara* sp. n.

Belongs to the *melanocephala* group; thorax conspicuously patterned with polished black and yellow, pleura with light silvery areas; knobs of halteres black; femora yellow with two darkened rings, the inner one broader, wings subhyaline to very weakly tinted, extreme tip darkened, stigma darker brown; abdomen dark brown, patterned with yellow; male hypopygium with basistyle produced into a spine that is bent at a right angle; outer dististyle a simple rod, inner style bilobed, one arm glabrous, pointed; aedeagus with apex produced into a very small point.

Male. — Length about 10 mm.; wing 8.2 mm. Rostrum brownish yellow, palpi dark brown. Antennae dark brown; outer flagellar segments long-oval. Head brown.

Pronotal scutum orange yellow, blackened anteriorly, scutellum blackened on sides. Mesonotal praescutum with anterior half chiefly polished yellow, especially the humeral area, medially with a chestnut brown stripe, sides darker, before suture expanded into a major black area that includes the margin, posterior border broadly yellow, slightly more brownish sublaterally; posterior sclerites light yellow, each scutal lobe with a single polished black stripe that reaches the suture and lateral border, median area broadly of the ground; mediotergite light yellow on cephalic half, brownish black behind, pleurotergite brownish black, the interpostnotal suture yellowed. Pleura with a major brownish black area on anepisternum, ventral sternopleurite more castaneous, the broad intermediate region light silvery, disconnected from a smaller similar area on meron. Halteres with stem yellow, knob black. Legs with all coxae and trochanters yellowed; femora yellow, each with two darkened rings, the inner one broader and paler, especially on posterior legs, bases of femora weakly darkened; tibiae yellow, base and tip narrowly darkened; tarsi obscure yellow, outer three segments dark brown; posterior basitarsi with an elongate modified sensory pocket at proximal end. Wings subhyaline to very weakly tinted with yellow, extreme tip darkened; stigma suboval, darker brown; veins brown, costal field more yellowed, cord darker. Venation: Sc_1 ending about opposite one-third R_s ; R_2 about twice R_{1-2} ; cell *1st* M_2 relatively small, shorter than vein M_4 .

Abdomen dark brown, outer segments and sternites conspicuously patterned with yellow, especially at and near the incisures, hypopygium dark brown. Sternal pocket on segment five a compact shield-shaped area, posterior end narrowed, anterior half broadly obtuse, without major setae, posterior part with about a dozen strong setae on either side, these directed mesad, their tips caudad; sternite six with from five to seven modified setae on either side of a broad central space, outer ones stouter, directed mesad and slightly caudad. Male hypopygium (Fig. 41) with outer end of basistyle, *b*, long-produced, apex obtuse, lobe at its base beyond midlength bent at a right angle into a strong spine, the inner margin of latter with abundant yellow setae; margin of mesal flange with about five short triangular points and several strong setae. Outer dististyle, *d*, a simple rod that ends opposite apex of basistyle, terminating in a glabrous point; inner style conspicuously bilobed apically, one arm with setae, the other plabrous, pointed. Aedeagus, *a*, relatively stout, apex produced into a very small point; ventral surface before apex with about 20 long strong setae distributed in two groups.

Holotype, ♂, El Volcán, Chiriqui, Panama, altitude 4200 feet, May 30, 1954 (Gordon Field).

Other generally similar regional species include *Teucholabis* (*Teucholabis*) *atrolata* Alexander, *T. (T.) homilacantha* Alexander, *T. (T.) melanocephala* (Fabricius), *T. (T.) perangusta* Alexander, and some others, all most readily separated among themselves by hypopygial structure and the conformations of the sternal pockets of the abdomen.

30. *Gonomyia* (*Progonomyia*) *nigrolutea* sp. n.

Head light gray; thorax black, strikingly patterned with light yellow; legs black; wings brown, stigma slightly darker, Sc_1 ending opposite midlength of *Rs*; abdomen black, the pleural membrane light yellow.

Female. — Length about 8 mm.; wing 6 mm. Rostrum and palpi black. Antennae black throughout. Head clear light gray, clear light yellow surrounding the antennal bases.

Pronotal scutum black, yellow laterally, scutellum and dorsopleural region light yellow. Mesonotum dark gray, praescutum with three more blackened stripes, humeral region and laterally before suture with subequal yellow areas, pseudosutural foveae polished black; scutal lobes almost uniformly blackened, posteriorly with a small yellow spot; posterior sclerites of notum black, base of scutellum slightly more reddened, pleurotergite with a

conspicuous oval yellow area. Pleura black, sparsely pruinose, with a broad yellow longitudinal stripe that includes the dorsal sternopleurite, ventral pteropleurite and metapleura. Halteres yellow, knob slightly darker. Legs black throughout. Wings (Fig. 38) light brown, stigma short-oval, slightly darker brown; veins dark brown. Venation: Sc long, Sc_1 ending opposite midlength of Rs , Sc_2 removed, Sc_1 slightly longer than R_{2-3-4} ; R_2 at or just before fork of R_{2-3-4} ; cell 2nd M_2 longer than its petiole; $m-cu$ at or close to fork of M .

Abdomen black, pleural membrane conspicuously light yellow. Ovipositor with cerci slender, upcurved to the acute tips.

Holotype, ♀, Juquiá, São Paulo, Brazil, altitude 300 meters, February 22, 1941 (Lauro Travassos Filho).

Somewhat similar regional species include *Gonomyia* (*Progonomyia*) *dstricta* Alexander and *G. (P.) dolorosa* Alexander, separated from the present fly by the body coloration.

31. *Gonomyia* (*Lipophleps*) *anduzeana* *acestra* subsp. n.

Male. — Length about 3.5-4 mm.; wing 3.3-3.9 mm. Rostrum light brown, palpi and antennae brownish black. Head light brown.

Pronotum and pretergites whitened. Mesonotal praescutum and scutal lobes dark brown, central region of scutum and the scutellum obscure brownish yellow, the latter darker basally; postnotum light brown, anterolateral parts of mediotergite obscure yellow. Pleura brown, with a broad whitened ventral stripe. Halteres with stem obscure yellow, knob pale brown. Legs with coxae and trochanters brownish yellow, remainder of legs light brown. Wings tinged with brown, prearcular and costal fields more yellowed, stigma not or scarcely indicated; veins pale brown. Venation: Sc_1 ending opposite origin of Rs , Sc_2 slightly removed; $m-cu$ a short distance beyond fork of M .

Abdomen brown, hypopygium slightly more yellowish brown. Male hypopygium generally as in typical *anduzeana*, differing in details. Dististyle with inner arm bearing the fasciculate setae with apex produced laterad into a stout point. Phallosome with the blackened spine very slender with only the base stouter.

Holotype, ♂, El Valle, Panama, altitude 2000 feet, December 23, 1953 (Gordon Field). Paratopotypes, ♂♂, with the type, December 22-23, 1953; paratype, ♂, Camp Butler, Canal Zone, Panama, January 20, 1954 (Gordon Field).

The general features of the male hypopygium are much as in *Gonomyia (Lipophleps) anduzeana* Alexander, described from San Esteban, Venezuela (Jour. New York Ent. Soc., 49: 141-142; 1941) but differing in details of structure.

32. *Erioptera (Mesocyphona) incurvata* sp. n.

Allied to *whitei*, differing in hypopygial structure.

Male. — Length about 2 mm.; wing 2.2 mm. Rostrum, palpi and antennae black. Head dark brown.

Prothorax brownish black, mesothorax paler, dark brown, scarcely patterned except for obscure yellow longitudinal pleural stripes, the ventral one passing below the light yellow halteres. Legs with coxae and trochanters brown; remainder of legs broken. Wings (Fig. 39) weakly infuscated, veins and trichia darker brown. Venation: R_{2-3-4} about one-half longer than the basal section of R_5 ; $m-cu$ some distance before fork of M ; vein 2nd A nearly straight, the cell narrow.

Abdomen dark brown, hypopygium slightly darker. Male hypopygium (Fig. 42) generally as in *whitei*. Outer dististyle, d , branched at near two-thirds the length, the arms slender, especially the outer blackened spine, its tip acute, with a slight elevation at near midlength of lower margin, axial arm narrower than in *whitei*. Phallosome, p , including strong spikelike outer apophyses, the tips microscopically spiculate; inner phallosome including strong incurved spines that are decussate above the bifurcate aedeagus.

Holotype, ♂, Gatun, Canal Zone, Panama, October 17, 1954 (Gordon Field).

The closest relative is *Erioptera (Mesocyphona) whitei* Alexander, of Guatemala, a slightly larger fly with the hypopygial structure quite distinct, as shown for comparison with the present species (Fig. 43).

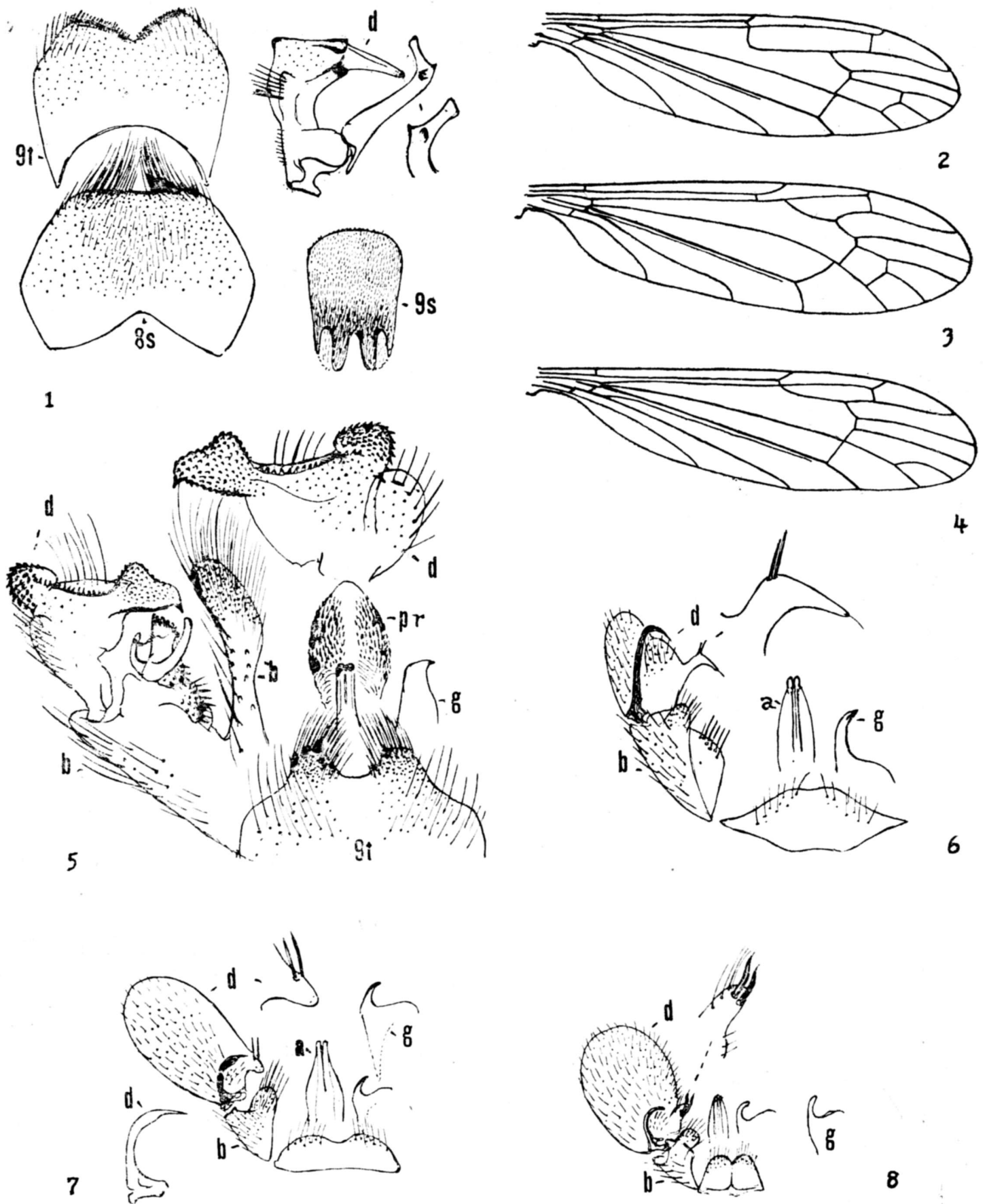


Fig. 1. *Tipula (Microtipula) obstinata* sp. n.; hypopygium. — Fig. 2. *Limonia (Caenolimonia) distantia* sp. n.; venation. — Fig. 3. *Limonia (Dicranomyia) submulsa* sp. n.; venation. — Fig. 4. *Limonia (Geranomyia) aneura* sp. n.; venation. — Fig. 5. *Limonia (Caenoglochina) lotax* sp. n.; male hypopygium. — Fig. 6. *Limonia (Caenolimonia) distantia* sp. n.; male hypopygium. — Fig. 7. *Limonia (Dicranomyia) brunneistigma* sp. n.; male hypopygium. — Fig. 8. *Limonia (Dicranomyia) submulsa* sp. n.; male hypopygium. — (Explanation of symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; pr, proctiger; s, sternite; t, tergite).

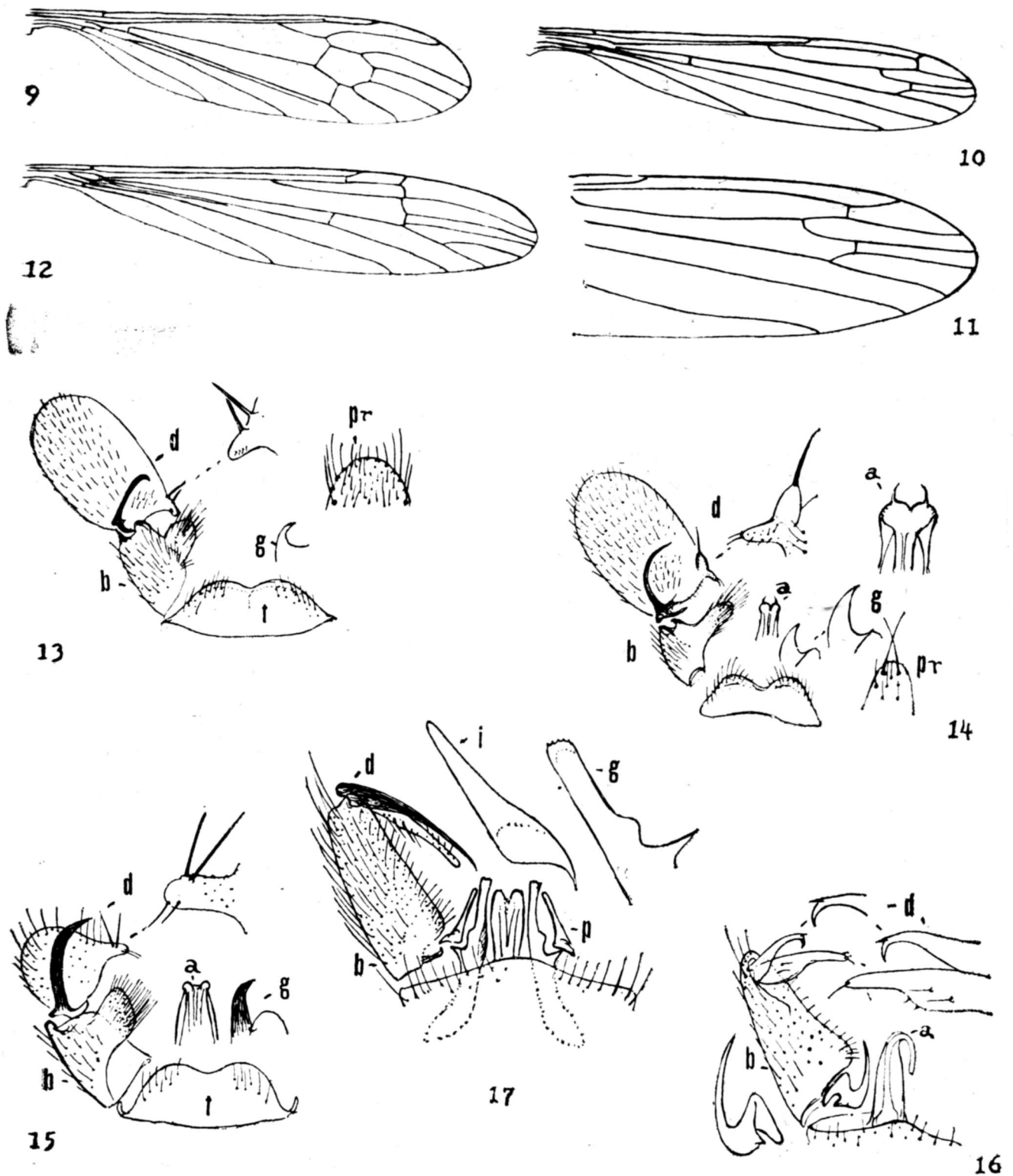
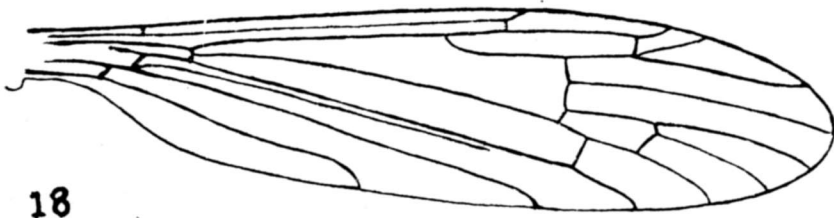
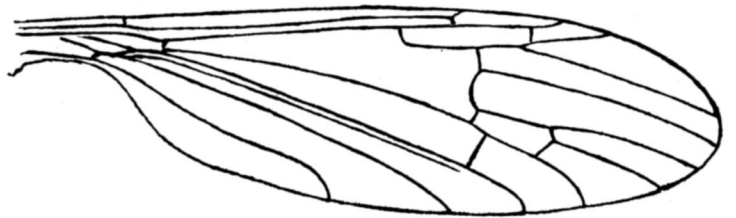


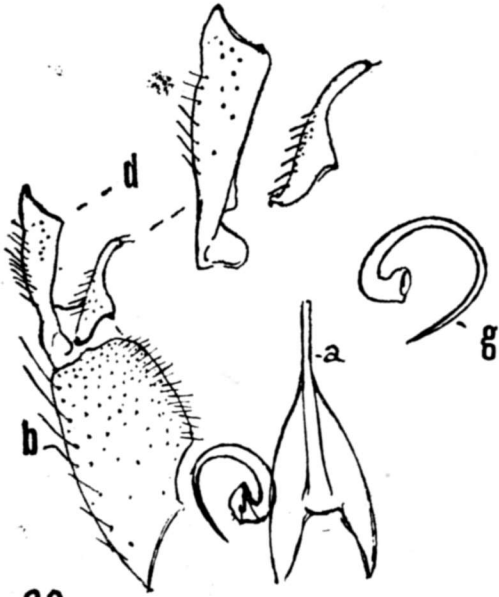
Fig. 9. *Helius (Heliopsis) quadrivena* sp. n.; venation. — Fig. 10. *Orimarga (Diotrepha) setosivena* sp. n.; venation, paratype. — Fig. 11. *Orimarga (Diotrepha) setosivena* sp. n.; venation, holotype. — Fig. 12. *Orimarga (Orimarga) transversalis* sp. n.; venation. — Fig. 13. *Limonia (Geranomyia) anesra* sp. n.; male hypopygium. — Fig. 14. *Limonia (Geranomyia) monorhaphidia* sp. n.; male hypopygium. — Fig. 15. *Limonia (Rhipidia) alampetis* sp. n.; male hypopygium. — Fig. 16. *Helius (Heliopsis) quadrivena* sp. n.; male hypopygium. — Fig. 17. *Orimarga (Diotrepha) setosivena* sp. n.; male hypopygium. — (Explanation of symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; i, interbase; p, phallosome; pr, proctiger; t, tergite).



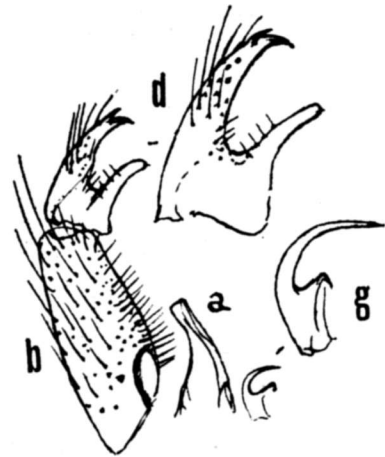
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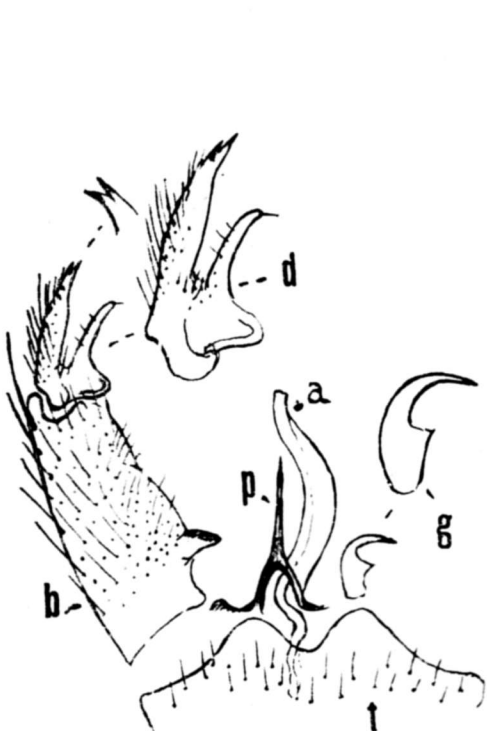
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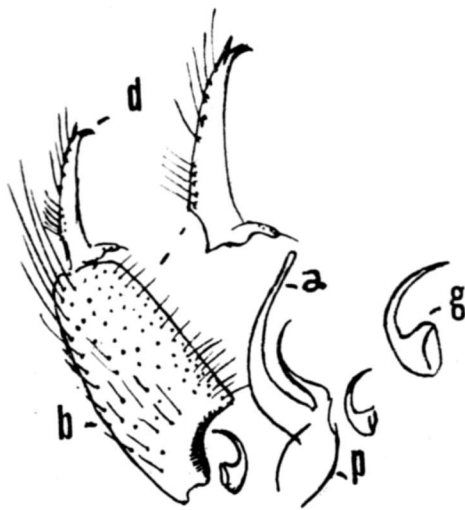
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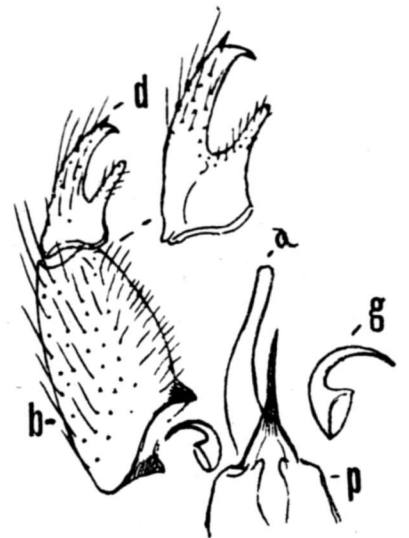
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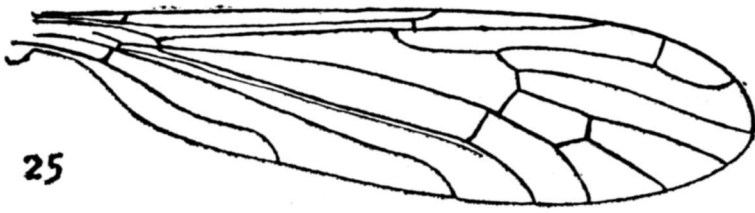


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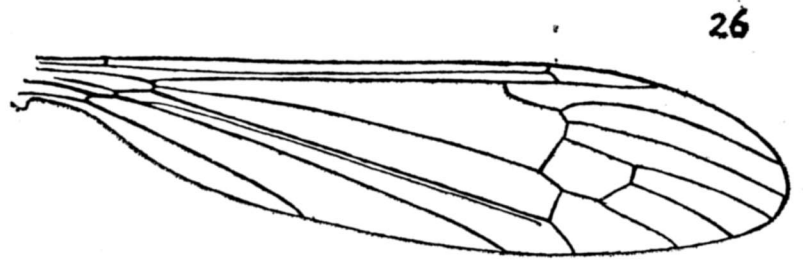


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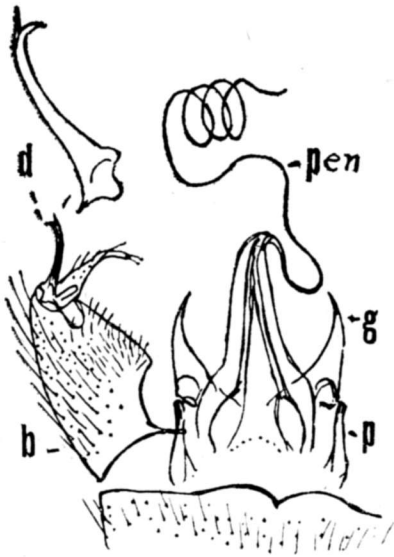
Fig. 18. *Shannonomyia dilatistyla* sp. n.; venation. — Fig. 19. *Shannonomyia exilostyla* sp. n.; venation. — Fig. 20. *Shannonomyia dilatistyla* sp. n.; male hypopygium. — Fig. 21. *Shannonomyia exilostyla* sp. n.; male hypopygium. — Fig. 22. *Shannonomyia lipernes* sp. n.; male hypopygium. — Fig. 23. *Shannonomyia microstyla* sp. n.; male hypopygium. — Fig. 24. *Shannonomyia setulicornis* sp. n.; male hypopygium. — (Explanation of symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; p, phallosome; t, tergite).



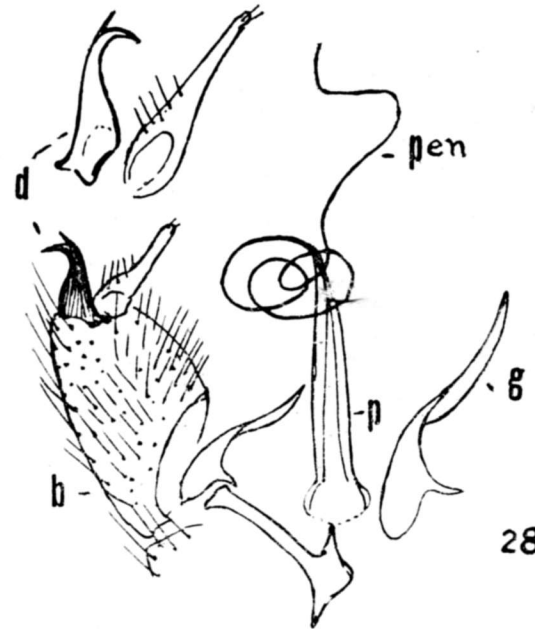
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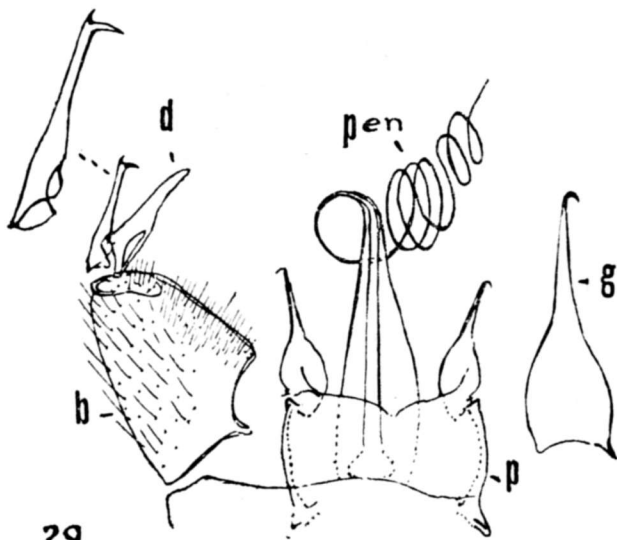
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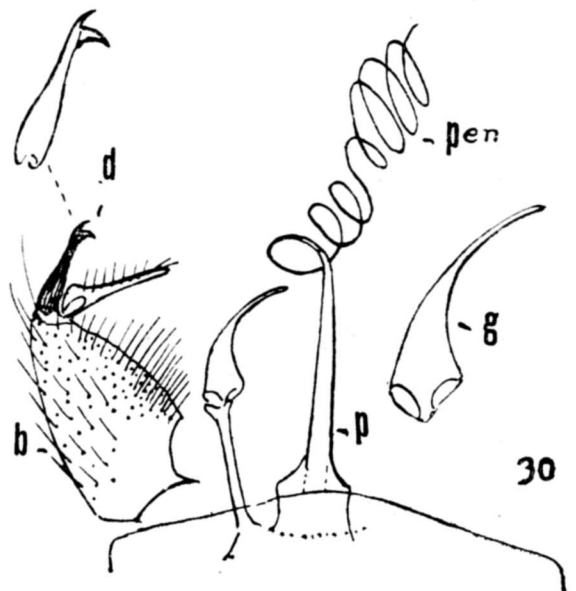
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Fig. 25. *Atarba (Ischnothrix) polypila* sp. n.; venation. — Fig. 26. *Elephantomyia (Elephantomyia) laticincta* sp. n.; venation. — Fig. 27. *Elephantomyia (Elephantomyia) laticincta* sp. n.; male hypopygium. — Fig. 28. *Elephantomyia (Elephantomyia) multizona* sp. n.; male hypopygium. — Fig. 29. *Elephantomyia (Elephantomyia) orthorhabda* sp. n.; male hypopygium. — Fig. 30. *Elephantomyia (Elephantomyia) scimitar* sp. n.; male hypopygium. — (Explanation of symbols: *b*, basistyle; *d*, dististyle; *g*, gonapophysis; *pen*, penefilum; *p*, phallosome).

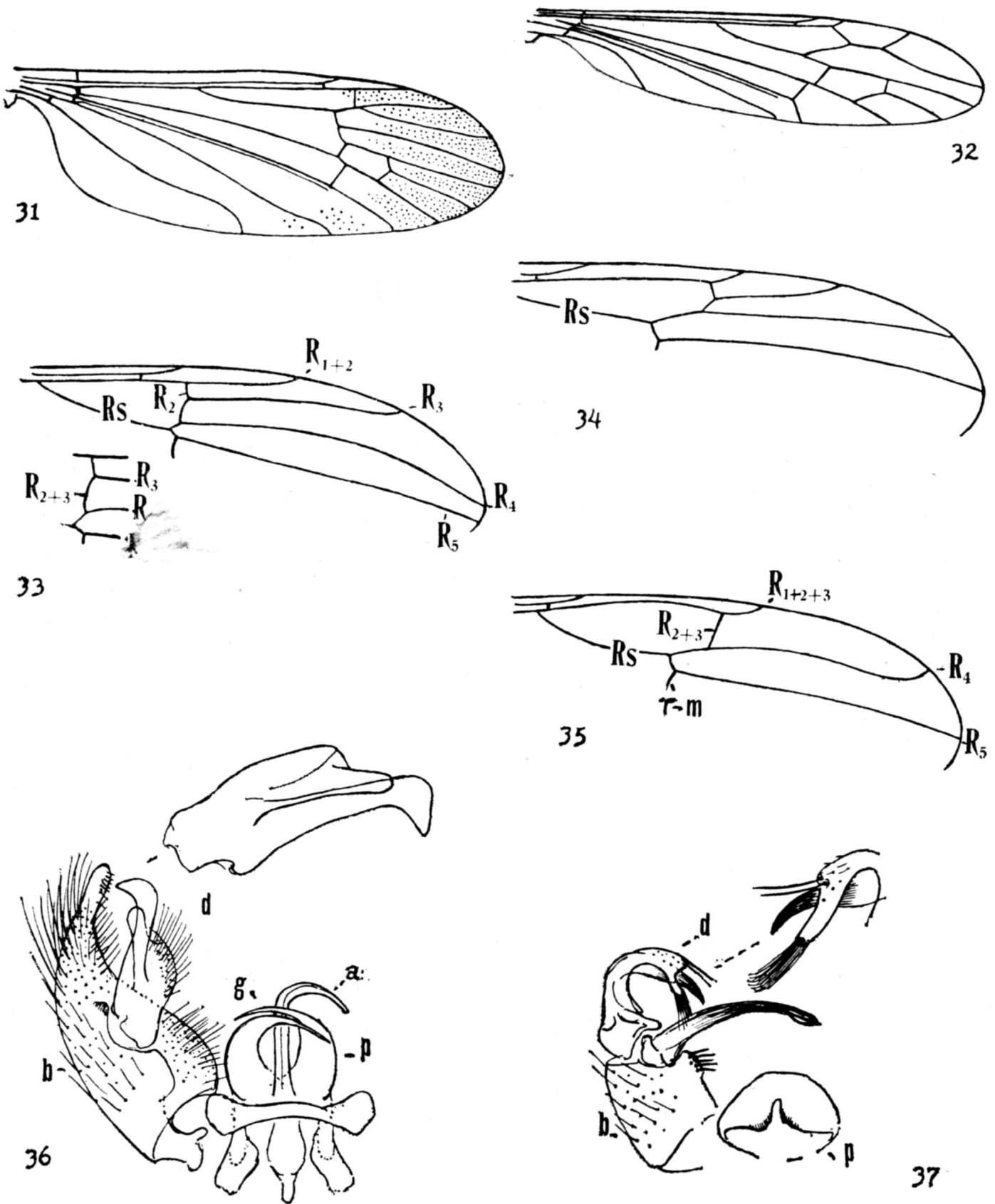


Fig. 31. *Eugnophomyia incurvata* sp. n.; venation. — Fig. 32. *Trentepohlia (Paramongoma) pallidistigma* sp. n.; venation. — Fig. 33. *Gymnastes (Neogymnastes) perexquisitus* Alexander; venation. — Fig. 34. *Gymnastes (Paragymnastes) fascipennis* (Thomson); venation. — Fig. 35. *Gymnastes (Gymnastes) cyanea* (Edwards); venation. — Fig. 36. *Eugnophomyia incurvata* sp. n.; male hypopygium. — Fig. 37. *Gymnastes (Neogymnastes) perexquisitus* sp. n.; male hypopygium. — (Explanation of symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; p, phallosome; venational symbols, r-m, radial-medial crossvein; R, Radius and branches; Sc, Subcosta).

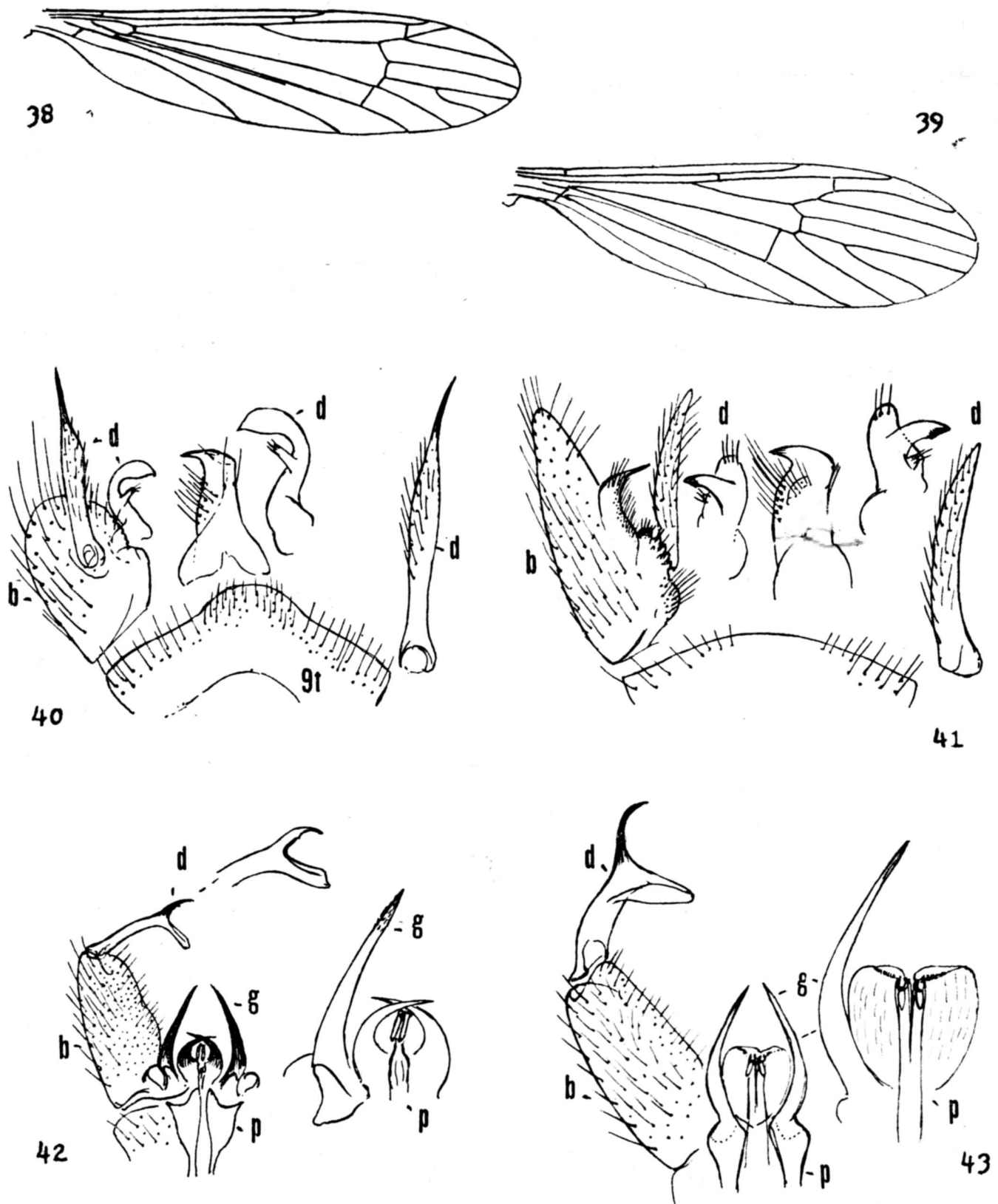


Fig. 38. *Gonomyia (Progonomyia) nigrolutea* sp. n.; venation. — Fig. 39. *Erioptera (Mesocyphona) incurvata* sp. n.; venation. — Fig. 40. *Teucholabis (Teucholabis) noctula* sp. n.; male hypopygium. — Fig. 41. *Teucholabis (Teucholabis) subclara* sp. n.; male hypopygium. — Fig. 42. *Erioptera (Mesocyphona) incurvata* sp. n.; male hypopygium. — Fig. 43. *Erioptera (Mesocyphona) whitei* Alexander; male hypopygium. — (Explanation of symbols: a, aedeagus; b, basistyle; d, dististyle; g, gonapophysis; p, phallosome; t, tergite).