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Records and descriptions of Brazilian Tipulidae (Dipt.). Part VIII

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(With 21 figures)

The very interesting crane-flies discussed at this time were taken in various states of southeastern Brazil, in Rio de Janeiro by Messrs. Father Thomaz Borgmeier, Lério Gomes and John Lane; in São Paulo by Mr. Lauro Travassos and Father Schwarzmaier; and in Paraná by Father Witte, the last received through the friendly interest of Father Borgmeier. I wish to express my very deepest thanks to all of the above entomologists for continuing to save these often neglected flies and for permitting me to retain the material in my extensive collection of the Tipulidae.

Records of distribution

Ozodicera (*Dihexaclonus*) *umbrifera* Alexander. — Therezopolis, Rio de Janeiro, 1940 (E. Freitas); through H. de Souza Lopes.

Tipula guarani Alexander. — El Dorado, São Paulo, May 14, 1940 (C. Worontzow); through Messias Carrera. Rio Negro, Paraná, altitude about 600 meters, May 15, 1940 (M. Witte).

Tipula gutticellula Alexander. — Nova Teutonia, Santa Catharina, March 16; April 1, 1939 (F. Plaumann).

Tipula laticostata Alexander. — Nova Teutonia, Santa Catharina, March 16; April 1, 1939 (F. Plaumann).

Limonia (*Dicranomyia*) *distans* (Osten Sacken). — Nova Teutonia, May 16, 1939 (F. Plaumann).

Limonia (*Dicranomyia*) *pampœcila* Alexander. — Nova Teutonia, May 15; June 14; August 20, 1939 (F. Plaumann).

Limonia (*Geranomyia*) *tibialis* (Loew). — Nova Teutonia, June 12; July 20, 1939 (F. Plaumann).

Limonia (*Rhipidia*) *annulicornis* (Enderlein). — Nova Teutonia, May 8-15; June 9-20; September 16-17, 1939 (F. Plaumann).

Limonia (*Rhipidia*) *bruchiana* Alexander. — Nova Teutonia, May 15, 1939 (F. Plaumann).

Limonia (*Rhipidia*) *domestica* (Osten Sacken). — Nova Teutonia, May 6; September 17, 1939 (F. Plaumann).

Limonia (*Rhipidia*) *flabelliformis brachynema* Alexander. — Nova Teutonia, July 6, 1939 (F. Plaumann).

Limonia (*Rhipidia*) *improperata* Alexander. — Nova Teutonia, May 9; July 6; August 24; September 17, 1939 (F. Plaumann).

Limonia (*Rhipidia*) *lacteitarsis* Alexander. — Nova Teutonia, July 5, July 30, 1939 (F. Plaumann).

Limonia (*Rhipidia*) *neglecta* Alexander. — Nova Teutonia, May 16; August 7; September 1, 1939 (F. Plaumann).

Limonia (*Rhipidia*) *simplicicornis* Alexander. — Nova Teutonia, July 7; August 23; September 7, 1939 (F Plaumann).

Gonomyia (*Lipophleps*) *inermis* Alexander. — Tocantins, Amazons, March 1931 (R. C. Shannon).

Gonomyia (*Lipophleps*) *puer* Alexander. — Fordlandia, Pará, June 1931 (R. C. Shannon).

Gonomyia (*Lipophleps*) *schadeana* Alexander. — Muqui, Espirito Santo, July 1940 (Lério Gomes). Formerly from Paraguay.

Descriptions of new species

Ozodicera (Dihexaclonus) superarmata, sp. n.

Allied to *fumipennis;* general coloration of thorax brownish gray, the praescutum with four darker brown stripes; pleura with a heavy grayish yellow bloom; antennae with basal flagellar segments yellow, the branches dark brown; flagellar branches united on basal half, the free tips unequal in length; wings

brownish yellow, the prearcular and costal fields darker; a conspicuous brown cloud on anterior cord; abdominal tergites reddish brown, on either side with a conspicuous black sublateral stripe, the outer segments uniformly darkened; male hypopygium with unusual armature, including two long curved black spines at apex of basistyle; gonapophyses long and slender, much exceeding the aedeagus.

Male. — Length, about 24 mm.; wing, 21 mm.; antenna, about 7 mm.

Frontal prolongation of head dark brown; nasus short; palpi black. Antennae (Fig. 1) with the scape dark brown; pedicel obscure yellow; basal flagellar segments yellow, the branches except at extreme bases dark brown; outer flagellar segments pale brown, the incisures still lighter; second flagellar segment with a single branch that is expanded and weakly bilobed at apex; segments three to seven, inclusive, with a single stout branch that forks at near midlength into two unequal branches; simple terminal segments very elongate, their total length considerably exceeding the total of the basal nine segments. Head dark brown; eyes large, the anterior vertex relatively narrow, about two-thirds the diameter of scape.

Pronotum brown. Mesonotal praescutum brownish gray with four darker brown stripes; scutal lobes reddish brown, each with two large, dark brown areas; scutellum and mediotergite brown with a grayish yellow pubescence. Pleura reddish brown with a heavy yellow or grayish yellow bloom. Halteres darkened. Legs with the coxae reddish brown, sparsely pruinose; trochanters reddish brown; femora obscure yellow, the tips rather narrowly and abruptly blackened; tibiae brown, the tips darkened; tarsi black. Wings with a strong brownish yellow tinge, the prearcular and costal fields darker; stigma scarcely differentiated; a conspicuous brown cloud on anterior cord; veins yellow, those in the darker areas scarcely deeper in color. Venation: Cell M_1 broadly sessile.

Abdominal tergites reddish brown, conspicuously blackened sublaterally, the extreme lateral borders pale; outer segments, including hypopygium, more uniformly brownish black; sternites obscure brownish yellow, the outer segments darker. Male hypopygium with the tergite (Fig. 7, *9t)* narrowed outwardly, the caudal border with a conspicuous V-shaped notch, the surface of tergite with abundant setae. Basistyle (Fig. 8, *b)* at apex produced into two long slender black spines, strongly curved, their

tips acute, the lower spine with setae along outer surface of basal half. Outer dististyle, *od,* conspicuously expanded at distal end. Inner dististyle, *id,* unequally bidentate at tip, the longest spine narrow and acute; outer margin of style near base with a conspicuous triangular tooth. Aedeagus (Fig. 7, *a)* relatively small, subtended on either side by long slender gonapophyses, *g,* the tips of the latter suddenly narrowed to acute spines.

Hab. Brazil (Paraná).

Holotype, male, Rio Negro, altitude about 600 meters, April 8, 1940 (Michael Witte).

The closest described species seems unquestionably to be *Ozodicera (Dihexaclonus) fumipennis* Loew of Brazil, which differs in details of coloration of the body and antennae, as the dark brown or brownish black flagellum. Loew's figure of the antennae shows the species to have the simple terminal segments much shorter than in the present fly. The remarkable armature of the basistyles of the male hypopygium is unique among the described species.

Ozodicera (Dihexaclonus) pumila, sp. n.

Size small (wing, female, 13 mm.); general coloration of mesonotum brown, the praescutum with four poorly indicated darker brown stripes; antennae (female) 15-segmented, with six branched flagellar segments, the first with a single triangular spur, the succeeding five each with two unequal short branches that are tipped with a single strong seta; terminal simple segment about one-half longer than the penultimate; femora and tibiae obscure yellow, the tips narrowly dark brown; wings with a strong brownish tinge, the costal and stigmal regions darker; abdominal tergites black, the basal ones obscure yellow.

Female. — Length, about 17 mm.; wing, 13 mm.; antenna, about 2 mm.

Frontal prolongation of head brown, subequal in length to remainder of head; nasus very small; palpi black. Antennae (Fig. 2) with scape pale brown; pedicel obscure yellow, flagellum pale brown, the flagellar branches slightly darker; antennae 15-segmented, there being six simple segments beyond the last branched one; terminal segment elongate, fully one-half longer than the penultimate; second flagellar segment with a simple triangular basal spur; flagellar segments three to seven, inclusive, very unequally bipectinate, the longest branch about equal to or a trifle longer than the segment, the short branch arising from

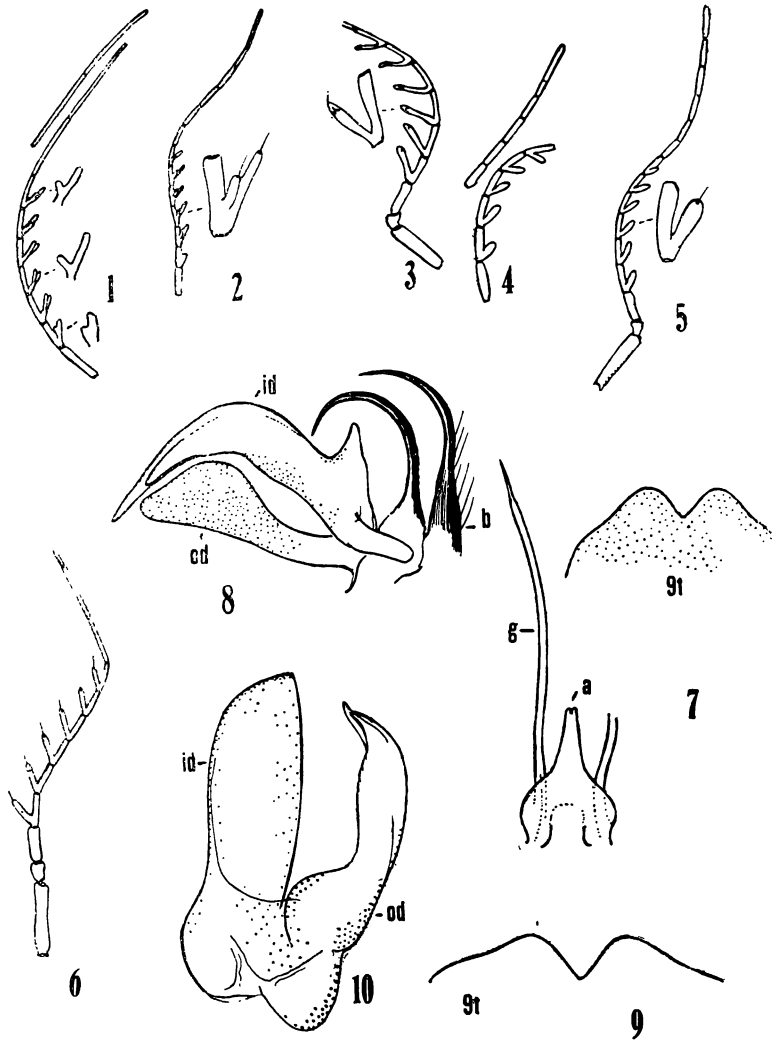

Fig. 1. *Ozodicera* (*Dihexaclonus*) *superarmata*, sp. n.; antenna male. — Fig. 2. *Ozodicera* (*Dihexaclonus*) *pumila*, sp. n.; antenna female. — Fig. 3. *Ozodicera* (*Dihexaclonus*) *noctivagans* Alexander; antenna male. — Fig. 4. *Ozodicera* (*Ozodicera*) *schwarzmaierana*, sp. n.; antenna male. — Fig. 5. *Ozodicera* (*Ozodicera*) *schwarzmaierana*, sp. n.; antenna female. — Fig. 6. *Ozodicera* (*Ozodicera*) *witteana*, sp. n.; antenna male. — Fig. 7. *Ozodicera* (*Dihexaclonus*) *superarmata*, sp. n.; male hypopygium. — Fig. 8. *Ozodicera* (*Dihexaclonus*) *superarmata*, sp. n.; male hypopygium. — Fig. 9. *Ozodicera* (*Ozodicera*) *witteana*, sp. n.; male hypopygium. — Fig. 10. *Ozodicera* (*Ozodicera*) *witteana*, sp. n.; male hypopygium. — (Symbols: *a*, ædeagus; *b*, basistyle; *g*, gonapophysis; *id*, inner dististyle; *od*, outer dististyle)

its base and aproximately one-half as long; both branches tipped with a single strong seta. The left antenna of the type on the first flagellar segment shows a protuberance near distal end not evident on the right organ. Head relatively dark brown; anterior vertex of moderate width, subequal in diameter to scape.

Mesonotum brown with four poorly indicated darker brown stripes; scutal lobes extensively darkened; scutellum and postnotum somewhat more pruinose, especially the latter. Pleura obscure yellowish brown, unmarked. Halteres dark throughout. Legs with the coxae and trochanters yellowish brown; femora and tibiae obscure yellow, the tips narrowly dark brown; tarsi passing through dark brown to black. Wings with a strong brown tinge, the costal border and the stigma slightly darker; a vaguely indicated dark cloud on anterior cord; veins dark brown; obliterative areas involving the veins along cord and outer end of R_{1-2}. Venation: R_{1-2} oblique, R_2 greatly reduced; cell M_1 broadly sessile.

Abdominal tergites black, the first segment, proximal portion of second and poorly indicated basal areas on succeeding tergites obscure yellow; sternites more uniformly yellow.

Hab. Brazil (São Paulo).

Holotype, female, Juquiá, altitude 30-50 meters, April 7, 1940 (L. Travassos). The collector informs me that this particular lot of material was taken near a virgin forest about 8 kilom. from Juquiá, some 50 kilom. from the sea-coast, on rainy nights. This is among small hills that are approximately 20 miles from the main range of the Paranapiacaba (average altitude 800 meters).

Ozodicera (*Dihexaclonus*) *pumila* is very distinct from the other small species of subgenus, *O.* (*D.*) *gracilirama* Alexander and *O.* (*D.*) *noctivagans* Alexander, by the structure of the antennae and the coloration of the body and wings. The very unequal condition of the flagellar branches presages the almost total obliteration of the small lateral spur, as found in *noctivagans* (Fig. 3) where the atrophied branch lies far out on the face of the primary one and is indicated only by a tiny tubercle tipped with a single strong seta. It is evident that the distinctions between the two so-called subgenera *Ozodicera* Westwood and *Dihexaclonus* Enderlein are so transient and superficial that the two groups can be maintained only with difficulty and for convenience only.

Ozodicera (Ozodicera) schwarzmaierana, sp. n.

General coloration of thorax brownish gray, the praescutum with four brown to reddish brown stripes; antennae with only five simply branched segments in male, six in female, the branches not exceeding the segments in length; wings with a weak brownish yellow tinge, the prearcular field infumated, the costal border more saturated yellow; weak dusky seams along vein *Cu* and on anterior cord; male hypopygium with caudal border of tergite

produced into two conspicuous obtuse lobes; apex of basistyle broadly obtuse and heavily blackened.

Male. — Length, about 20 mm.; wing, 18 mm.; antenna, about 3.8 mm.

Female. — Length about 24 mm.; wing, 18.5 mm.; antenna, about 4 mm.

Frontal prolongation of head light brown to reddish brown; nasus lacking or reduced to a scarcely evident stub; palpi brownish black. Antennae with the basal two or three segments obscure yellow, the remaining segments yellow with the apices of the flagellar branches blackened; simple outer segments a trifle darkened; flagellar segments in both sexes single, not exceeding the segments in length, each with a strong cubapical seta indicating the position of a former branch or tubercle; in the type male (Fig. 4) there are only five such branched segments, flagellar segment seven being simple; in female there are six such segments (Fig. 5), segment seven having the branch reduced, only about one-half the segments in length, each with a strong subapical seta indicating fifteen. Head light buffy to buffy gray; anterior vertex relatively wide, in male exceeding twice the diameter of scape, in female a trifle narrower.

Pronotum light brownish gray. Mesonotal praescutum brownish gray, in male with four clearly defined dark brown stripes that are very vaguely margined with darker, the stripes in female much paler; scutum brownish gray, the lobes variegated with darker; scutellum and postnotum more yellow pollinose. Pleura and pleurotergite yellow. Halteres with stem light brown, knob brownish black. Legs with the coxae and trochanters yellow; femora obscure yellow to brownish yellow, the tips scarcely darkened; tibiae brownish yellow, the tips narrowly darkened; tarsi passing into brownish black. Wings with a weak brownish yellow tinge, the costal region slightly more saturated yellow; prearcular field infumated; stigma pale yellow, scarcely differentiated from the ground; weak dusky seams along vein *Cu* and on anterior cord; veins brown. Venation: *Rs* relatively long, exceeding *m-cu* in length; *r-m* short to very short; cell M_1 broadly sessile.

Abdomen with basal tergites yellow, on the second and succeeding segments more brownish yellow, gradually deepening on outer segments; distinct black lateral stripes and a much less evident median line, on the sixth and succeeding segments including virtually the entire sclerite; male hypopygium abruptly yellow. In

female, the median tergal stripe is lost or virtually so; sternites yellow, the outer segments more darkened. Male hypopygium with the tergite transverse, the caudal margin truncate but with two conspicuous obtuse submedian lobes that are separated by a somewhat similar U-shaped notch; lobes with dense short setae. Apex of basistyle broadly and irregularly obtuse, heavily blackened and microscopically roughened. Apex of outer dististyle unequally bidentate, one tooth a slender spine, the other shorter and more obtuse. Inner dististyle slender, its apex narrowed to a point. Gonapophyses small and weak.

Hab. Brazil (São Paulo).

Holotype, male, Pindamonhangaba, 1940 (Schwarzmaier). Allotopotype, female.

I take great pleasure in naming this species in honor of Father Sebastião Schwarzmaier, C. SS. R., to whom I am indebted for Tipulidae from Goyaz and São Paulo. The species is closest to *Ozodicera (Ozodicera) cinereipennis* Alexander, likewise from southeastern Brazil, differing in the short antennae, pattern of the wings, and in the details of structure of the male hypopygium.

Ozodicera (Ozodicera) witteana, sp. n.

General coloration brownish gray, the praescutum with conspicuous brown stripes; antennae with six flagellar segments bearing simple branches that are subequal in length to the segments; wings handsomely patterned, pale brown with the central portion whitened; vein *Cu* and anterior cord heavily seamed with dark brown; abdominal tergites reddish brown, trivittate with dark brown; male hypopygium with the outer dististyle cultriform.

Male. — Length, about 30 mm.; wing, 22 mm.; antenna, about 6 mm.

Frontal prolongation of head dark brown; nasus not evident; palpi brownish black. Antennae (Fig. 6) with scape reddish brown, pedicel and flagellum more yellow, the branches and outer simple segments a trifle darker; branches simple, subequal in length to the segments, the most basal branches with a seta at midlength, this placed farther out on each succeeding segment, the outer branches with both setae terminal. Head buffy brown.

Thorax of unique type badly crushed, the ground color brownish gray, the praescutum with conspicuous dark brown stripes; posterior sclerites of notum less distinctly variegated with yellowish gray pollen and pale brown areas. Pleura chiefly dark brown, heavily yellowish gray pollinose, the anepisternum and

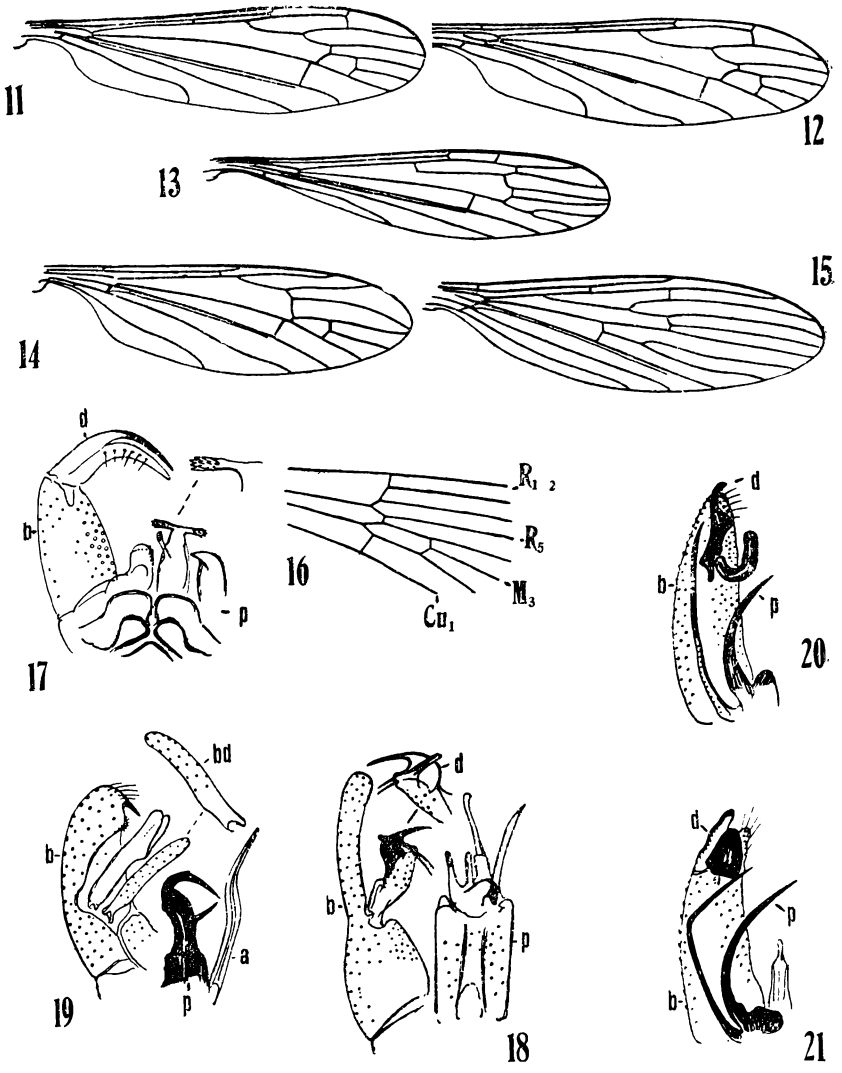

Fig. 11. *Limonia* (*Rhipidia*) *latiluteæ*, sp. n.; venation. — Fig. 12. *Limonia ocellana*, sp. n.; venation. — Fig. 13. *Orimarga* (*Orimarga*) *lanei*, sp. n.; venation. — Fig. 14. *Gonomyia* (*Lipophleps*) *petronis*, sp. n.; venation. — Fig. 15. *Molophilus* (*Molophilus*) *gomesi*, sp. n.; venation. — Fig. 16. *Molophilus* (*Trichomolophilus*) *celator*, sp. n.; venation. — Fig. 17. *Orimarga* (*Orimarga*) *lanei*, sp. n.; male hypopygium. — Fig. 18. *Gonomyia* (*Lipophleps*) *petronis*, sp. n.; male hypopygium. — Fig. 19. *Molophilus* (*Molophilus*) *gomesi*, sp. n.; male hypopygium. — Fig. 20. *Molophilus* (*Trichomolophilus*) *celator*, sp. n.; male hypopygium. — Fig. 21. *Molophilus* (*Trichomolophilus*) *multisetosus* Alexander; male hypopygium. — (Symbols: *R*, Radial; *M*, Medial; *Cu*, Cubital veins; *b*, basistyle; *bd*, basal dististyle; *d*, dististyle; *p*, phallosome).

ventral sternopleurite darker. Halteres dark brown. Legs with the coxae yellowish gray pollinose; trochanters brownish yellow; femora and tibiae obscure yellow, the tips narrowly blackened; tarsi brown, soon passing into black. Wings handsomely patterned;

ground color pale brown, variegated by yellowish white and darker brown; the whitened area appears as a central longitudinal stripe involving the broad bases of the Anal cells, most of cell *M*, cell *1st* M_2 and cell R_5, reaching the wing-margin in the latter cell, broadly interrupted by a continuous dark seam along the entire length of vein *Cu* and more narrowly broken by a seam at the cord; this major pale area sends further extensions into cell M_4, base of cell M_1, and less distinctly into cell R_3; the major dark brown areas include the cubital seam above mentioned and a cloud on the anterior cord; prearcular and costal fields brighter brown; stigma scarcely differentiated; veins pale brown, deeper in the darkest areas. Venation: Cell *1st* M_2 relatively long, its inner end narrowed; cell M_1 sessile.

Abdominal tergites reddish brown, trivittate with dark brown, the stripes interrupted at the posterior borders of the segments; basal tergite yellowish gray pruinose; extreme posterior borders of segments pale; outer tergites, including hypopygium, more uniformly brownish black; basal sternites obscure yellow, the outer segments passing into brown. Male hypopygium with the tergite (Fig. 9, *9t)* broadly transverse, its caudal margin with a V-shaped notch, the obtusely triangular lobes thus formed with abundant short setulae and more sparse pale setae. Basistyle with the apex obtuse, not produced or armed. Outer dististyle (Fig. 10, *od)* cultriform, a little longer than the narrow inner dististyle, *id,* the latter bifid at apex, its outer margin, especially at base, with abundant long erect setae. Gonapophyses small and weak.

Hab. Brazil (Paraná).

Holotype, male, Rio Negro, altitude about 600 meters, March 3, 1940 (Michael Witte).

I take pleasure in naming this distinct fly in honor of the collector, Father Michael Witte O. F. M. From the other species of the subgenus having conspicuously patterned wings, as *Ozodicera (Ozodicera) bimaculata* Enderlein, *O. (O.) epicosma* Alexander and *O. (O.) striatipennis* Alexander, the present fly differs very conspicuously in the pattern of the wings.

Limonia (Rhipidia) latilutea, sp. n.

Thorax bicolored, the dorsum extensively dark brown, the pleura, together with the cephalic and lateral two-thirds of the praescutum, abruptly light yellow; a dark brown stripe on extreme ventral pleura; fore femora with tips conspicuously blackened, mid femora with a narrower dark subterminal ring, posterior femora

almost unpatterned; wings with the broad costal border light yellow, constrasting with the darkened posterior two-thirds of wing; a restricted darker brown pattern on several of the veins; abdominal tergites brown, the caudal borders brownish black.

Sex ? — Wing, 7 mm.

Head broken.

Mesonotum dark brown, the entire cephalic and lateral two-thirds of the praescutum uniformly light yellow, contrasting with the brown disk which thus appears as a triangular area, narrowly bordered laterally by still darker brown; posterior border of mediotergite yellow. Pleura and pleurotergite uniformly and extensively yellow, confluent with the praescutal borders, with a narrow but very conspicuous, ventral, brownish black stripe extending from the fore coxae across the sternopleurite and meron to the base of abdomen, further involving all but the extreme tips of the middle and hind coxae. Halteres yellow. Legs with the coxae brownish black, the tips pale; trochanters yellow; femora yellow, the fore legs with the tips broadly black, including about the distal fifth; middle femora yellow with a narrower, nearly apical, dark brown ring, about twice as extensive as the yellow tips beyond; hind femora almost uniformly yellow, with a scarcely evident, very narrow, darkened subterminal ring; tibiae and tarsi yellow, the terminal tarsal segments black. Wings (Fig. 11) with the broad costal border light yellow, contrasting with the darkened posterior two-thirds of the wing; isolated dark markings at the supernumerary crossvein in cell *Sc;* origin of *Sc;* R_2; along cord and outer end of cell *1st* M_2, and as very small marginal spots at ends of all longitudinal veins; stigmal area oval, with the center pale; cells beyond cord with dusky central streaks, the vicinity of the veins more yellow; cells *M, Cu* and the Anals uniformly darkened; axillary region and posterior half of prearcular field darkened, the cephalic half yellow; veins of costal border yellow, of the darkened fields brown. Venation: A supernumerary crossvein in cell *Sc;* Sc_2 at tip of Sc_1; Sc_1 ending about opposite two-fifths the length of *Rs;* free tip of Sc_2 and R_2 in approximate transverse alignment; basal section of R_{4-5} long; inner end of cell *1st* M_2 arcuated; *m-cu* before fork of *M.*

Abdominal tergites brown, the caudal borders brownish black; basal sternites pale; abdomen broken beyond the third segment.

Hab. Brazil (Rio de Janeiro).

Holotype, Sex?, Petrópolis, altitude about 2750 feet, April 13, 1940 (T. Borgmeier).

The present fly is readily told by the conspicuous patterns of the thorax and of the wings. The specific name has a double significance, referring both to the broad yellow border of menosotal praescutum and to the cephalic portion of the wings. The fly is entirely distinct from *Limonia* (*Rhipidia*) *subpectinata* (Williston) and other allied species that have the cephalic portion of the praescutum abruptly pale.

Limonia ocellana, sp. n.

General coloration of thorax black, only the pronotum and cephalic third of praescutum brightened; halteres with darkened knobs; femora obscure brownish yellow, the tips narrowly blackened, tibiae and tarsi black; wings with the ground color of cells of cephalic half cream-yellow, of the posterior half more infuscated; six complete or virtually complete dark brown ocellate markings in the radial field; Sc_1 ending about opposite midlength *Rs; m-cu* before fork of *M;* abdominal tergites brown, the caudal borders broadly and conspicuously dark brown; sternites yellow, the incisures narrowly dark brown.

Female. — Length, about 9 mm.; wing, 8 mm.

Head broken.

Pronotum reddish brown, blackened on sides. Mesonotum chiefly black or brownish black, the cephalic third of the praescutum more reddish brown, the mediotergite and central region of scutellum more pruinose. Pleura and pleurotergite brownish black, the surface weakly dusted with more reddish pollen beneath the wing root. Halteres short; stem pale, with a darkened ring at near midlength, knob dark brown. Legs with the coxae brownish black, the tips restrictedly paler; trochanters obscure yellow; femora obscure brownish yellow, the tips rather narrowly but very conspicuously blackened; tibiae and tarsi black, including the posterior pair. Wings (Fig. 12) with the ground color cream-yellow, virtually restricted to the cephalic half of wing, the posterior cells, including the Anals, *Cu* and most of *M* strongly infuscated; a conspicuous ocellate brown pattern, with complete or virtually complete ocelli centering at arculus, the supernumerary crossvein in cell *Sc*, origin of *Rs*, fork of *Sc*, fork of *Rs*, and R_2, a total of six; stigma solidly darkened or virtually so; dark washes in centers of all outer radial and medial cells; prearcular field darkened; cream-colored areas on either side of *m-cu*, at bases of Anal cells and near outer end of cell *1st A;* veins brown, veins *Sc* and *R*

more yellow in the ground interspaces. Venation: *Sc* long, Sc_1 ending nearly opposite midlength of *Rs*, Sc_2 at its tip; a supernumerary crossvein at near midlength of cell *Sc*; *m-cu* before fork of *M*.

Abdominal tergites brown, the caudal borders broadly and conspicuously dark brown; sternites obscure yellow, the incisures narrowly dark brown. Ovipositor with the genital segment darkened; cerci relatively long and slender, exceeding the hypovalvae, blackened at bases, paler outwardly, gently upcurved.

Hab. Brazil (Rio de Janeiro).

Holotype, female, Petrópolis, altitude about 2750 feet, March 4, 1940 (T. Borgmeier).

Limonia ocellana is very different from all described Neotropical members of the genus. Since the head is lacking in the unique type, I cannot be absolutely sure of the subgeneric position but it is almost certainly a member of *Rhipidia* Meigen. The ocellate pattern of the wings is common in the subgenus *Discobola* Osten Sacken, and occurs scatteringly in some other subgenera, as *Limonia* Meigen and *Geranomyia* Haliday, but is very rare or unknown elsewhere in the genus, including *Rhipidia*.

Orimarga (Orimarga) lanei, sp. n.

General coloration of thorax black, the dorsopleural region and a more ventral pleural stripe silvery gray; halteres and legs black; wings with a strong blackish tinge, especially in male; *Sc* relatively short, Sc_1 ending about opposite one-third the length of *Rs*, Sc_2 at its tip; R_{2-3} short; *m-cu* only about two to two and one-half times its own length before the fork of *M*; male hypopygium with the setae of basistyle not arranged in tufts or brushes, relatively sparse, each seta simple; outer gonapophyses broad.

Male. — Length, about 5 mm. wing, 5 mm.

Female. — Wing, 4.5 mm.

Rostrum and palpi black. Antennae black throughout, the scape a little pruinose. Head black, the broad anterior vertex heavily gray pruinose.

Pronotum light gray pruinose, sending a silvery gray line caudad to the wing-root. Mesonotum black, unpatterned, the surface polished. Pleura black, with a narrow silvery longitudinal stripe, extending from behind the fore coxae to above the hind coxae. Halteres and legs black throughout. Wings (Fig. 13) with a strong blackish tinge, deepest in the male, the costal portion

and outer radial field more intensely saturated; veins black. Costal fringe of moderate length. Venation: *Sc* relatively short, Sc_1 ending about opposite one-third the length of *Rs*, Sc_2 at its tip; *Rs* long, angulated to nearly square at origin; R_{1-2} very long, about twice (in male) to about one-half longer (in female) than the second section of *M*; R_{2-3} short, a little longer than *r-m*; *m-cu* relatively near the fork of *M*, being about two to two and one-half times its length before this point; cell *2nd A* relatively narrow.

Abdomen black. Male hypopygium (Fig. 17) with the setae of mesal face of basistyle long and conspicuous but not tufted or grouped, and not roughened as in *scabriseta*. Inner dististyle, *id*, a little exceeding the outher style, *od*, the distal third of the latter very long and slender. Outer gonapophyses with the lobes broad, the inner or mesal edge with sparse microscopic spinules; other armature of phallosome complex, about as shown in the figure.

Hab. Brazil (Rio de Janeiro).

Holotype, male, Tinguá, July 1940 (John Lane). Allotopotype, a fragmentary female.

Orimarga (*Orimarga*) *lanei* is named in honor of the collector, Mr. John Lane, distinguished student of both the biting and non-biting Nematocera of Tropical America. The species is most closely allied to *O.* (*O.*) *funerula* Alexander, of Peru, and *O.* (*O.*) *scabriseta* Alexander, of Ecuador, differing especially in the very distinct structure of the male hypopygium.

Gonomyia (Lipophleps) petronis, sp. n.

Belongs to the *manca* group; antennae black throughout; thoracic pleura dark brown with a conspicuous, pale yellow, longitudinal stripe; halteres dusky; legs dark brown, the tarsi somewhat paler brown; wings with a strong brown suffusion; Sc_1 ending opposite origin of *Rs;* male hypopygium with the apical lobe of basistyle very long, exceeding in length the style itself; dististyle terminating in a slender, gently curved, black spine, with a blackened rod lying across the disk of the blade; phallosome with five points, including two blackened rods and two longer pale blades, one of which is acute at tip.

Male. — Length, about 3.5 mm.; wing, 4-4.2 mm.

Female. — Length, about 4.5-5 mm.; wing, 4-4.3 mm.

Rostrum and palpi brownish black. Antennae black throughout; flagellar segments long-cylindrical with the usual elongate verticils in male, as well as additional, unusually long, pale erect pubescence. Head dark gray with a pale yellow spot on occiput.

Pronotum and pretergites clear light yellow. Mesonotum dark brown, the median region of praescutum and the broad posterior margin of scutellum obscure brownish yellow to brighter yellow; mediotergite slightly pruinose, the cephalic-lateral portion yellow. Pleura dark brown, with a conspicuous, pale yellow, longitudinal stripe, the dorsopleural region still darker. Halteres dusky. Legs with the coxae and trochanters brown; femora and tibiae dark brown, the tarsi somewhat paler brown. Wings (Fig. 14) with a strong brown suffusion, the stigmal area very vaguely and diffusely darkened; prearcular field and costal border pale yellow; veins brown. Venation: Sc_1 ending opposite to just beyond the origin of *Rs*, Sc_2 at its tip; *Rs* relatively long, about one-half longer than cell *1st* M_2; anterior branch of *Rs* long; *m-cu* at or shortly before fork of *M*.

Abdominal tergites medium brown; sternites and hypopygium slightly more yellowish brown. Male hypopygium (Fig. 18) with the apical lobe of basistyle exceeding in length the style itself, a little expanded at outer end, provided with long delicate setae. Dististyle, *d*, terminating in a slender, gently curved, black spine, with a blackened rod lying across its disk; fasciculate setae two, on mesal edge of style before the blackened spine. Phallosome, *p*, with two blackened points and two longer pale blades, the one a little expanded and truncated at apex, the second acute.

Hab. Brazil (Rio de Janeiro).

Holotype, male, Petrópolis, altitude about 2750 feet, April 13, 1940 (T. Borgmeier). Allotopotype, female, pinned with type. Paratopotypes, 6 males and females, March 5 — April 13, 1940 (T. Borgmeier).

Gonomyia (*Lipophleps*) *petronis* is most closely allied to *G.* (*L.*) *pilosispina* Alexander and *G.* (*L.*) *secespita* Alexander, both of southeastern Brazil, all three having the phallosome of generally similar structure but with the dististyle quite different.

Molophilus (Molophilus) gomesi, sp. n.

Belongs to the *plagiatus* group; antennae (male) elongate; general coloration dark brown; wings with a strong blackish suffusion, veins and trichia dark; vein R_{2-3-4} unusually long; petiole of cell M_3 long, exceeding four times the length of *m-cu*; male hypopygium with beak of basistyle slender; arms of outer dististyle stout, obtuse at tips; basal dististyle a simple rod, its tip obtuse; phallosome a long conspicuous black rod that narrows to

a long slender apical spine, with a conspicuous lateral spine at near midlength.

Male. — Length, about 4 mm.; wing, 4.7 mm.

Rostrum and palpi dark brown. Antennae (male) black throughout, elongate; flagellar segments dilated at near midlength and here provided with very long, outspreading setae, those at middle of organ fully twice as long as the greatest length of segment. Head dark brown.

Mesothorax, including pleura, uniformly dark brown. Halteres dark brown, the base of stem a trifle paler. Legs dark brown throughout. Wings (Fig. 15) with a strong blackish suffusion that is slightly more concentrated along the veins leaving the centers of the cells paler; prearcular field vaguely more brightened; macrotrichia and veins darker. Venation: R_{2-3-4} unusually long, a little exceeding the basal section of R_{4-5}; petiole of cell M_3 long, exceeding four times *m-cu;* vein *2nd A* long, for most of its length extending virtually parallel to *1st A.*

Abdomen, including hypopygium, black. Male hypopygium (Fig. 19) with the apical beak of basistyle, *b,* long and slender, directed strongly cephalad and mesad. Outer dististyle with the arms very stout, their tips obtuse. Basal dististyle, *bd,* a simple, gently curved, dark rod, its tip obtuse, the surface with numerous scattered setigerous punctures over most of the length. Phallosome, *p,* a long conspicuous black rod, strongly sinuous or curved to a long slender apical spine, at near midlength bearing a conspicuous lateral spine. Aedeagus, *a,* sinuous, a little dilated at near midlength.

Hab. Brazil (Rio de Janeiro).

Holotype, male, Ribeirão das Lages, September 1940 (L. Gomes).

Molophilus (*Molophilus*) *gomesi* is named in honor of the collector, Mr. Lério Gomes, to whom I am indebted for many interesting Tipulidae. Among the described regional species it is closest to *M.* (*M.*) *phallosomicus* Alexander, of southeastern Brazil, which has the antennal structure almost identical but has the phallosome entirely different.

Molophilus (Trichomolophilus) celator, sp. n.

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

Characters as in the type of the subgenus, *M. (T.) multisetosus* Alexander, likewise from southern Brazil (Campo Bello, Rio de Janeiro, January 29, 1930).

Wings with the ground color more grayish hyaline, with black trichia; veins very faintly indicated, pale brown. Venation (Fig. 16): R_{2-3-4} present, about one-half as long as basal section of R_5; R_2 subequal to the suberect R_{2-3}; *m-cu* in transverse alignment with *r-m;* cell *1st* M_2 closed. Legs apparently with the vestiture much as in the subgenotype but black instead of brown. Male hypopygium (Fig. 20) with the basistyle, *b,* very long, the tip narrowly obtuse but unarmed with spines or points, provided with abundant long setae. Both dististyles or branches of a single style, *d,* nearly apical in position, placed at near three-fourths the length of basistyle, the outer dististyle broader, its apical third narrowed; inner dististyle a gently curved simple rod. What is interpreted as being the phallosome, *p,* consists of two long rods, the inner pair a little shorter, broad on basal third, thence gradually narrowed to the acute tip; outer rods of equal diameter for virtually the whole length, only the apex drawn out into a long spine; outer face of rod at base with several strong punctures. Further discussion of the possible homologies of these parts is given below.

Molophilus multisetosus (Fig. 21) has the outer end of basistyle, *b,* and the dististyles, *d,* entirely different; both dististyles massive and darkened; apex of basistyle strongly blackened. Rods of phallosome, *p,* more nearly equal in length but the inner pair stouter, expanded at base; outer rods bent at near two-thirds their length.

Hab. Brazil (Rio de Janeiro).

Holotype, male, in poor condition, Rio de Janeiro, March 1940 (John Lane).

The closed cell *1st* M_2 of the present fly, not visible in the unique specimen of *multisetosus,* furnishes an important further character for the definition of the subgenus *Trichomolophilus* Alexander. The basic plan of the male hypopygium seems quite different from that of either the subgenus *Molophilus* Curtis or *Eumolophilus* Alexander. In the latter, the phallosome appears as a lyre-shaped structure, fused across the midline of the body. In *Trichomolophilus* there are four basal elements, two on either side, widely separated on the midline. From their position and from the other phallosomic structures present, the homologies of these conspicuous rods are still uncertain. It is at least possible that the four rods represent additional dististyles that are unusually basad in position, or, possibly, the outer pair represents the dististyles, the inner pair arms of the phallosome.