

XXIII.—New or little-known Tipulidæ (*Diptera*).—LVII.
Neotropical Species. By CHARLES P. ALEXANDER,
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THE interesting series of crane-flies described at this time were secured in various parts of eastern Ecuador by Mr. William Clarke-Macintyre and native collectors. I express my very deep thanks to the collectors for their continued interest in saving these too often neglected flies. The types are preserved in my personal collection.

Ozodicera (Ozodicera) trispinifer, sp. n.

General coloration brownish grey, the præscutum with four concolorous stripes that are narrowly bordered by more reddish brown; antennæ with basal three segments obscure brownish yellow, the remaining segments black; flagellar branches short; wings brownish grey, the base and costal border more brownish yellow; abdominal tergites reddish brown, trivittate with dark brown; sternites yellow; male hypopygium with inner dististyle complex, its outer arm trispinous, the more slender inner arm bifid at apex.

Male.—Length about 25 mm.; wing 20 mm.; antenna about 5.8 mm.

Frontal prolongation of head brownish black, subequal in length to remainder of head; nasus conspicuous; palpi black. Antennæ relatively long; basal three segments obscure brownish yellow, the remaining segments black; flagellar branches relatively short and stout, simple, subequal in length to the segments; terminal simple segments progressively elongate. Head brownish grey; anterior vertex narrow, a little more than one-half the diameter of the scape.

Mesonotal præscutum brownish grey, with four concolorous stripes that are narrowly bordered by more reddish brown; scutum reddish brown; scutellum grey, parascutella more reddish; postnotum more yellowish grey pruinose. Pleura chiefly light grey. Halteres infuscated. Legs with coxæ pale, dusted with grey; trochanters yellow; femora reddish brown; tibiæ brown; tarsi black. Wings brownish grey, the prearcular and costal regions, with the stigma, brownish

yellow; veins brown. Venation: distal half of R_{1+2} pale; R_2 short; $r-m$ reduced; cell M_1 broadly sessile.

Abdominal tergites reddish brown, trivittate with dark brown, restricting the ground-colour to sublateral lines; sternites yellow. Male hypopygium with the inner dististyle heavily sclerotized and very complex in structure; outer arm short and broad, trispinous at apex, the median spine short; inner arm longer than the outer, its stem slender, at apex conspicuously bifid, the outer branch a curved flattened spine, the inner branch more expanded at apex.

Hab. Ecuador (Oriente).

Holotype, ♂, Abitagua, Rio Pastaza, altitude 1200 metres April 11, 1937 (*Macintyre*).

The most similar species is *Ozodicera* (*Ozodicera*) *bispinifer* Alexander, of Amazonian Brazil, which is somewhat smaller and with the hypopygium, especially the inner dististyle, differently constructed.

Holorusia lassula, sp. n.

Size large (wing, ♂, over 20 mm.); general coloration dark brown, the præscutum and scutum variegated with more reddish brown; pleura with a conspicuous longitudinal yellow stripe; antennæ elongate, the segments vaguely serrate; wings with a strong brown tinge, sparsely patterned with darker brown and cream-coloured areas; male hypopygium with the tergite small, its apex trilobed; outer dististyle flattened, the apex truncate and produced into about eight spinous points.

Male.—Length about 16–18 mm.; wing 21–24 mm.; antenna about 7–7.5 mm.

Frontal prolongation of head relatively long, subequal in length to remainder of head, brownish black; nasus long and conspicuous; palpi black, the incisures restrictedly paler. Antennæ (male) elongate; basal three or four segments obscure yellow, the outer segments passing into black; flagellar segments elongate, without basal swelling; each flagellar segment arises from the oblique apex of the preceding, so the latter is slightly extended beyond the base of the next, producing a feebly serrated appearance. Head deep cinnamon brown, the vertex with a more or less distinct paler median vitta; posterior orbits more or less pruinose; anterior vertex about two-and-one-half times the diameter of the scape.

Pronotum chiefly yellow, especially on sides. Mesonotum chiefly and almost uniformly dark brown, the præscutum with indications of four more reddish-brown stripes, the centres of the scutal lobes similarly brightened. Pleura with a broad, conspicuous, yellow stripe extending from the pronotum to beneath the wing-root, involving the dorsopleural membrane; ventral pleurotergite more silvery, forming the posterior end of the yellow pleural stripe; a black longitudinal stripe lying ventrad of the yellow one; remainder of pleura greyish, vaguely patterned with brown. Halteres dusky, base of stem yellow. Legs with coxæ and trochanters pale brown; femora brownish yellow, the tips more blackened, in cases with a poorly indicated subterminal ring; tibiæ and tarsi brown, passing into black, the tibial bases restrictedly yellow. Wings with a strong brown tinge, the oval stigma darker brown; restricted brown clouds at arculus, origin of *Rs* and *m-cu*; small cream-coloured spots in outer cells, including cells *R*₅, two in *M*₁, one in base of 2nd *M*₂, and one in outer end of cell 1st *A*; pale areas before and beyond origin of *Rs* and along vein *Cu* in cell *M*; veins brown. Venation: *R*₃ not strongly arcuated, weakly angular at mid-length.

Abdomen relatively short; tergites dark brown, more or less variegated with obscure yellow; sternites yellow; apex of hypopygium paling to yellow. Male hypopygium with the tergite small, its apex trilobed, the median lobe broader than the laterals; lobes set with strong blackened setæ. Outer dististyle flattened, curved, the apex truncate, with about eight irregular pale teeth.

Hab. Ecuador (Oriente).

Holotype, ♂, Abitagua, Rio Pastaza, altitude 1200 metres, September 21, 1937 (*Macintyre*). *Paratopotype*, ♂, August 20, 1937 (*Macintyre*).

Holorusia lassus is quite distinct from all other regional species of the genus in the elongate antennæ of peculiar structure, the pattern of the wings, and, especially, the structure of the male hypopygium.

Tipula obirata, sp. n.

General coloration of mesonotum obscure brownish yellow, the præscutum with three black stripes, the median one partly split by a pale line; a conspicuous black spot

on dorsopleural region; scutellum pale; postnotum brownish black; knobs of halteres dark brown; femora yellow, the tips narrowly black; wings yellow, variegated with pale brown and dark brown; R_{1+2} atrophied; basal abdominal tergites yellow, blackened laterally; valves of ovipositor slender.

Female.—Length about 12 mm.; wing 13 mm.

Frontal prolongation of head yellow, including the nasus, the latter tufted with black setæ; palpi black. Antennæ with scape and pedicel yellow, flagellum black; verticils (female) shorter than the segments. Head buffy, scarcely darker medially; vertical tubercle low and inconspicuous.

Pronotum yellow. Mesonotal præscutum nitidous, obscure brownish yellow, with three black stripes, the median one partly split by a pale line; a conspicuous black spot on dorsopleural region opposite the cephalic end of the lateral stripe; scutal lobes brownish black, the median region testaceous; scutellum yellow, parascutella brownish black; postnotum, including both mediotergite and pleurotergite, brownish black. Pleura chiefly yellow, the anepisternum and sternopleurite more variegated with brown. Halteres with stem yellow, knob dark brown. Legs with the coxæ and trochanters yellow; femora yellow, the tips narrowly blackened, the amount subequal on all legs, the tips preceded by a scarcely differentiated clearer yellow ring; tibiæ yellowish brown, the tips narrowly blackened; tarsi black. Wings with the ground-colour cream-yellow, variegated with dark and pale brown areas; prearcular region and interspaces of cell *Sc* brighter yellow; darker areas arranged as follows: postarcular and stigmal, with two further subcostal spots between, the second at origin of *Rs*, these two areas interconnected posteriorly in cells *R* and *M*; paler brown areas extensive, subequal in extent to the yellow ground, the latter appearing chiefly as an incomplete band beyond stigma, bases of outer medial cells, and as two broad bands crossing the wing before cord, one subbasal, the second before cord and not quite reaching the posterior border; veins yellow in the ground, darker in the clouded areas. Venation: R_{1+2} atrophied; *Rs* and R_3 subequal in length; petiole of cell M_1 subequal to *m*; *m-cu* connecting with

vein M_4 , the basal section of the latter long and perpendicular.

Basal abdominal tergites yellow, blackened laterally, the outer tergites more obscure brownish yellow, variegated sublaterally with dark brown or brownish black, the extreme margins pale; sternites obscure brownish yellow, variegated with darker brown on either side; genital shield yellow; cerci long and slender; hypovalvæ and bases more blackened.

Hab. Ecuador (Oriente).

Holotype, ♀, Yunguilla, Rio Blanco, altitude 1900 metres, August 3, 1937 (*Macintyre*).

In the wing-pattern and venation this fly is most similar to *Tipula fraudulenta* Alexander, likewise from Ecuador, differing conspicuously in the body-pattern, coloration of the antennal flagellum, pattern of the femora and other characters. It is possible that both of these species are better placed in the subgenus *Microtipula* Alexander, despite the major size.

Tipula jubilans, sp. n.

General coloration yellow, the præscutum with dark spots at cephalic median portion and behind each pseudosutural fovea; femora yellow, the tips narrowly black; tibiæ and tarsi uniformly black; wings yellow, handsomely patterned with brown; vein R_{1+2} entire; abdomen yellow, the lateral margin of second tergite narrowly blackened.

Female.—Length about 12 mm.; wing 12 mm.

Frontal prolongation of head yellow; nasus distinct; palpi with basal two segments brown, the terminal segments dark brown. Antennæ with scape and pedicel light yellow; first flagellar segment brownish yellow, remaining segments black, with long verticils. Head fulvous brown, the anterior vertex yellow, about four times as wide as the diameter of scape.

Pronotum yellow. Mesonotal præscutum fulvous yellow, the usual stripes scarcely differentiated except by their more polished nature, the extreme cephalic end of median stripe brownish black; a circular black spot on margin of præscutum, immediately behind the pseudosutural foveæ; posterior sclerites of notum fulvous yellow. Pleura, including the dorsopleural membrane,

yellow. Halteres yellow, the base of knob weakly darkened. Legs with the coxæ and trochanters yellow; femora obscure yellow, the tips rather narrowly but conspicuously black, the amount subequal on all legs, the ring preceded by a more or less distinct clearer yellow annulus; tibiæ and tarsi entirely black. Wings with the ground-colour yellow, the prearcular and costal portions more saturated yellow; a restricted brown pattern, as follows: a major blotch at *h*, extending caudad and expanded, reaching vein Cu_2 behind; spot at origin of *Rs* and another before mid-length of vein *R*; a larger darkening in cell *M* adjoining vein *Cu* at near two-thirds its length; stigma darker brown, confluent with a dark cloud on anterior cord; all outer radial and medial cells darkened, with conspicuous central areas of the pale ground-colour, the dark colour thus more or less confined to the veins; more restricted brown washes in outer ends of anal cells; veins dark brown, yellow in the ground areas. Squama naked. Venation: R_{1+2} entire, its basal half with trichia; *Rs* more than twice *m-cu*; petiole of cell M_1 subequal to *m*.

Abdominal tergites yellow, the lateral margin of second tergite narrowly blackened; sternites light yellow. Ovipositor with cerci nearly straight, horn-coloured.

Hab. Ecuador (Oriente).

Holotype, ♀, Abitagua, Rio Pastaza, altitude 1200 metres, September 20, 1937 (*Macintyre*).

Tipula jubilans is very different from the other species of the genus so far made known. The lack of dark clouding near the outer end of cell *M* distinguishes the species from other regional forms that have the wing-pattern generally similar.

Tipula (Microtipula) fatidica, sp. n.

General coloration yellow, variegated with black; antennal flagellum uniformly black; head dark grey; præscutum with a conspicuous black stripe on lateral border; posterior sclerites of notum and pleura chiefly darkened; halteres yellow, the knob dark brown; tibiæ and tarsi black; wings whitish cream colour, heavily patterned with brown; cell *C* almost uniformly infuscated, cell *Sc* variegated alternately with brown and yellow; outer abdominal segments uniformly blackened.

Male.—Length about 10 mm. ; wing 10 mm. ; antenna about 2.3 mm.

Frontal prolongation of head dark brown ; nasus scarcely developed ; palpi black. Antennæ of moderate length, if bent backward about reaching the wing-root ; scape and pedicel yellow, flagellum black ; flagellar segments nearly cylindrical, the basal enlargements not or scarcely developed ; longest verticils a little shorter than the segments. Front yellow ; vertex dark grey ; vertical tubercle very small.

Pronotum yellow. Mesonotal præscutum obscure yellow, with three black stripes, the surface nitidous ; lateral margin of præscutum opposite anterior ends of præscutal stripes and partly involving the dorsopleural membrane intensely black ; posterior sclerites of notum chiefly darkened, the scutellum and central area of mediotergite testaceous. Pleura obscure yellow, heavily variegated with brown, the pleurotergite blackened ; dorso-pleural membrane yellow. Halteres yellow, the knob dark brown. Legs with the fore and middle coxæ dark brown, posterior coxæ yellow ; trochanters yellow ; femora yellow basally, passing into brown at near mid-length, the tips broadly blackened, preceded by a clearly-defined yellow ring of nearly equal width ; dark postmedial ring less indicated on posterior than on other legs ; tibiæ and tarsi black. Wings with the ground-colour whitish cream colour, very heavily patterned with brown ; prearcular field chiefly darkened ; cell *C* almost uniformly infuscated, a little darker at *h* ; cell *Sc* chiefly dark, with alternating yellow areas, the two lying basad of origin of *Rs* much reduced, the third outer area more extensive ; remainder of disk with the brown and cream areas nearly equal in extent, the latter including a broad incomplete cross-band beyond cord, bases of outer medial cells and extensive areas in the basal and anal cells ; an extensive postarcular darkening in bases of cells *R* and *M* ; veins dark, pale in the ground areas. Venation : *Rs* straight, R_{2+3} long, about one-half *Rs* ; R_3 long and straight, subequal to *Rs* ; basal section of M_{1+2} long and nearly erect, cell 1st M_2 thus unusually high, its greatest length about one-half more than the width ; cell 2nd *A* narrow.

Basal abdominal tergite yellow ; segments two and three extensively variegated with black ; fourth and

succeeding segments uniformly black; basal sternites brownish yellow, the sixth and outer segments black.

Hab. Ecuador (Tungurahua).

Holotype, ♂, Baños, altitude 1900 metres, May 10, 1935 (*Macintyre*).

The nearest described relative is *Tipula* (*Microtipula*) *atrovelutina* Alexander, of Paraguay, which differs in numerous details of coloration of the body, halteres, legs and wings.

Tipula (*Eumicrotipula*) *petiolaris*, sp. n.

General coloration brown, præscutal stripes scarcely evident; frontal prolongation of head yellow above, blackened on sides; antennal flagellum bicoloured; pleura brownish black, variegated with yellow; legs black, the femora with a narrow yellow subterminal ring; wings cream-yellow, variegated with dark and lighter brown areas; dark costal areas not interconnected behind; macrotrichia in outer two-thirds of cells beyond cord; petiole of cell M_1 exceeding vein m ; abdominal segments dimidiate, brownish black to black, the posterior borders broadly yellow.

Female.—Length about 7.5 mm.; wing 9 mm.

Frontal prolongation of head obscure yellow above, blackened on sides; nasus very reduced; palpi black. Antennæ with scape and pedicel light yellow; flagellar segments bicoloured, black basally, the distal ends yellow, the bicolorous nature extending to the terminal segment. Head dark brown behind, paler brown on anterior vertex; front buffy.

Mesonotum brown, the præscutal stripes scarcely evident; posterior sclerites of notum dark brown. Pleura brownish black, variegated with yellow on dorsopleural membrane, on ventral pteropleurite and along suture between sternopleurite and anepisternum. Halteres long, stem yellow, knob dark brown. Legs with the fore coxæ darkened, the remaining coxæ testaceous yellow; trochanters yellow; femora brownish black, restrictedly obscure yellow at base, the tips black, preceded by a slightly narrower, clear yellow ring; tibiæ and tarsi black. Wings with the ground-colour cream-yellow, heavily marbled with dark and lighter brown; cell C pale brown, except at the ends; large darker brown

areas at arculus, mid-length of cell *Sc*, origin of *Rs*, and stigma, the areas not interconnected posteriorly, the centre pair not invading cell *C*; beyond the cord, the cells brown, checkered with small ground spots, including a nearly marginal series at ends of cells; basad of cord, the ground-colour exceeds the dark in amount, especially in cells *R* and *M*; major dark areas in cell *M* at outer end and near mid-length; veins yellow in the ground areas, darker elsewhere. Macrotrichia in outer two-thirds of cells beyond cord. Venation: cell M_1 long-petiolate, the petiole exceeding vein *m*; *m-cu* on M_4 just beyond origin; M_{3+4} only about two-thirds the basal section of M_{1+2} .

Abdomen with the segments dimidiate, brownish black to black basally, the posterior borders broadly yellow.

Hab. Ecuador (Oriente).

Holotype, ♀, Mapoto, Rio Pastaza, altitude 1400 metres, September 28, 1938 (*Macintyre*).

The other species of *Eumicrotipula* are from southern Brazil and northern Argentina, these including *T. (E.) hostifica* Alexander, *T. (E.) iguazuensis* Alexander, the subgenotype *T. (E.) macrotrichiata* Alexander, and *T. (E.) perstudiosa* Alexander. All of the above species, having cell M_1 petiolate, have the macrotrichia of the cells much more extensive and the wing-pattern quite distinct, with the dark costal areas interconnected posteriorly in cell *R*.

Limonia (Neolimnobia) interstitialis, sp. n.

General coloration yellow, the pronotum and anterior third of præscutum with a median brown stripe; legs dark brown; wings pale yellow, very sparsely patterned with brown; *Sc* short; supernumerary cross-vein in cell R_3 in direct transverse alignment with vein R_2 ; cell 1st M_2 longer than any of the veins beyond it; *m-cu* at fork of *M*; ovipositor with small slender cerci.

Female.—Length about 7 mm.; wing 7 mm.

Rostrum brown; palpi black. Antennæ with scape yellow, pedicel dark brown, flagellum black; basal flagellar segments short and crowded, the outer ones oval with well-marked incisures; terminal segment longer than the penultimate. Head dark brown.

Pronotum yellow, narrowly dark brown medially. Mesonotum reddish yellow, the præscutum with a dark brown median line on anterior third; scutellum and mediotergite more broadly but less distinctly darkened medially. Pleura yellow. Halteres with stem pale, knob dark brown. Legs with coxæ yellow; trochanters greenish; remainder of legs dark brown; claws with a major outer spine and about two smaller basal ones. Wings with a very pale yellow tinge, sparsely patterned with brown, appearing as seams at arculus, origin of *Rs*, fork of *Sc*, cord, *R*₂, supernumerary cross-vein in cell *R*₃ and along the outer end of cell 1st *M*₂; veins brown. Venation: *Sc* short, *Sc*₁ ending shortly beyond origin of *Rs*, *Sc*₂ at its tip; *Rs* long, angulated and short-spurred at origin; a supernumerary cross-vein in cell *R*₃ in direct transverse alignment with *R*₂; cell 1st *M*₂ longer than any of the veins beyond it; *m-cu* at fork of *M*, longer than distal section of *Cu*₁; cell 2nd *A* wide. One wing of type has an adventitious cross-vein in cell *R*₃, additional to the supernumerary.

Abdominal tergites obscure brownish yellow, the incisions a little darker, to produce a weak dimidiate effect; basal sternites more uniformly yellow. Ovipositor with cerci slender, gently curved, much smaller and weaker than the strong hypovalvæ.

Hab. Ecuador (Oriente).

Holotype, ♀, Mapoto, Rio Pastaza, altitude 1300 metres, October 1, 1938 (*Macintyre*).

The general appearance of the present fly is more as in the *repanda* group of the typical subgenus *Limonia*. I am referring it to *Neolimnobia* with much question and solely on the basis of the presence of a supernumerary cross-vein in cell *R*₃ of the wings. It is very different from all other species of *Neolimnobia* and the members of the *repanda* group.

Limonia (Geranomyia) rabula, sp. n.

General coloration pale brownish testaceous, the præscutum unstriped; rostrum elongate; knobs of halteres infuscated; legs brown; wings with a brownish tinge, the oval stigma darker brown; *Sc*₁ ending shortly before mid-length of *Rs*; abdominal tergites dark brown, sternites yellow, male hypopygium with the ventral

dististyle large and fleshy; rostral prolongation small, with two long spines from a low common tubercle.

Male.—Length, excluding rostrum, about 6 mm.; wing 7.5 mm.; rostrum about 4.2 mm.

Rostrum long, brown; labial palpi slender; palpi dark brown. Antennæ about one-third the length of rostrum, black; flagellar segments oval, poorly delimited. Head dark grey; anterior vertex reduced, a little narrower than the diameter of the scape.

Thoracic dorsum almost uniformly pale brownish testaceous, præscutum unstriped; scutal lobes and testellum a trifle darker. Pleura yellow, the anepisternum a little darker. Halteres short, stem yellow, knob infuscated. Legs with the coxæ and trochanters pale yellow; remainder of legs brown, tibiæ and tarsi somewhat darker; claws almost simple. Wings with a brown tinge, unmarked except for the oval, darker brown stigma; veins dark brown. Venation: *Sc* moderately long, *Sc*₁ ending shortly before mid-length of *Rs*, *Sc*₂ at its tip; supernumerary cross-vein in cell *Sc* at near mid-distance between arculus and origin of *Rs*; *r-m* reduced; cell 1st *M*₂ a little shorter than vein *M*₁₊₂ beyond it; *m-cu* at fork of *M*.

Abdominal tergites dark brown, sternites yellow; hypopygium brownish yellow. Male hypopygium with the caudal margin of tergite subtransverse, feebly to scarcely notched. Basistyle small. Ventral dististyle very large, with small rostral prolongation; rostral spines elongate, about one-half longer than the prolongation, arising from a low common tubercle, subequal to one another in length. Gonapophyses with mesal-apical lobes pale, at tips strongly curved into acute points.

Hab. Ecuador (Oriente).

Holotype, ♂, Baños, Tungurahua, altitude 2000 metres, May 25, 1937 (*Macintyre*).

Limonia (*Geranomyia*) *radula* somewhat resembles *L. (G.) turbida* (Alexander) but is readily told by the structure of the male hypopygium.

Limonia (*Geranomyia*) *inæquispinosa*, sp. n.

General coloration pale reddish yellow, the præscutum with a single median brown stripe; pleura unmarked; femora pale brown, deepening to a darker ring before

the yellow tips; wings ochreous, very sparsely patterned with brown, including a common area at origin of *Rs* and fork of *Sc*; cell 1st M_2 elongate, exceeding any of the veins beyond it; male hypopygium with the rostral spines of the ventral dististyle arising from separate tubercles, very unequal in size, the outer hair-like.

Male.—Length, excluding rostrum, about 6 mm.; wing 7 mm.; rostrum about 3 mm.

Rostrum about one-half the length of remainder of body, black, the labial palpi a little paler. Antennæ black throughout; flagellar segments suboval. Head grey, darker behind.

Mesonotal præscutum reddish yellow with a single, darker brown, median stripe, the humeral region slightly tinged with green; scutal lobes weakly infused, the median area pale; scutellum uniformly pale yellow; mediotergite darkened. Pleura uniformly reddish yellow, unmarked. Halteres with stem yellow, knob tinged with greenish. Legs with the coxæ and trochanters pale yellow; femora pale brown, deeper outwardly to form a vague ring before the broad yellow apex; tibiæ and tarsi brown. Wings tinged with ochreous, the prearcular field and cell *Sc* clearer yellow; a restricted brown pattern, including the oval stigma; a small cloud at the supernumerary cross-vein in cell *Sc*; a small common area involving the origin of *Rs* and fork of *Sc*; vague to scarcely apparent seams along cord and outer end of cell 1st M_2 ; extensive but very pale brown clouds at ends of *Cu* and both anal veins; veins yellow, darker in the clouded areas. Venation: *Sc* short, Sc_1 ending shortly beyond origin of *Rs*, Sc_2 at its tip; supernumerary cross-vein in cell *Sc* at near mid-length of cell; cell 1st M_2 elongate, exceeding any of the veins issuing from it; *m-cu* close to fork of *M*.

Abdomen light brown; hypopygium slightly paler. Male hypopygium with the tergite moderately emarginate. Ventral dististyle relatively extensive, its area about twice that of the basistyle; rostral prolongation relatively slender, with two spines that are entirely separate arising from small basal tubercles; proximal spine much stouter and a little longer than the hair-like outer spine. Gonapophyses with mesal-apical lobes long and slender, pale.

Hab. Ecuador (Oriente).

Holotype, ♂, Baños, Tungurahua, altitude 2000 metres, May 25, 1937 (*Macintyre*). *Paratopotypes*, 2 ♂♂.

Limonia (Geranomyia) inæquispinosa is quite distinct from all allied regional species, having a single præscutal stripe, yellow femoral tips and sparsely patterned wings, with a common dark area at origin of *Rs* and fork of *Sc*. The structure of the male hypopygium is distinctive.

Limonia (Geranomyia) destricta, sp. n.

General coloration of mesonotum obscure yellow, with three narrow brown discal stripes, together with more broadly darkened lateral margins; wings heavily patterned with brown, including major areas at base, supernumerary cross-vein in cell *Sc*, stigma and cord, wing-apex and marginal clouds at ends of anal veins; ground area beyond cord broad; male hypopygium with the two rostral spines arising from a common tubercle; mesal-apical lobes of gonapophyses slender, gently curved, the tips acute.

Male.—Length, excluding rostrum, about 6.5 mm.; wing 8.8 mm.; rostrum about 4 mm.

Rostrum relatively long, exceeding one-half the body in length; both the labrum and labial palpi of unusual length, brownish black, the tips of the palpi a little brightened. Antennæ brownish black, with inconspicuous verticils. Head black, the vertex with a capillary silvery median vitta that is equal in width to the anterior vertex.

Pronotum ochreous, a little darker medially. Mesonotal præscutum obscure yellow, sparsely pruinose, with three narrow brown stripes, the lateral borders of the sclerite more broadly darkened; median area of scutum yellow, lobes brownish grey, encircled by dark brown; scutellum obscure yellow; mediotergite reddish brown, the cephalic portion more darkened. Pleura reddish, the anepisternum conspicuously darkened, the pteropleurite and pleurotergite less evidently so. Halteres yellow, the knobs dark brown. Legs with the coxæ and trochanters obscure yellow; remainder of legs broken. Wings with the ground colour yellow, the costal border more saturated; an unusually heavy brown pattern, as follows: postarcular in cells *Sc* and *R*; at supernumerary cross-vein in cell *Sc*, involving cells *C*, *Sc* and *R*, more extensive than the pale interspaces on either side; a major common area at origin of *Rs* and fork

of *Sc*, interrupted by a tiny pale spot in cell *Sc* but broadly continuous in cells *R* and *R*₁; stigma, fork of *Rs* and cord, all interconnected; outer end of cell 1st *M*₂, connected with an extensive apical clouding in cells *Sc*₂ to *M*₄; major dark clouds at ends of anal veins; vague pale brown washes in cells *M*, *Cu* and 1st *A*; veins yellow, darker in the clouded areas. Venation: *Sc* moderately long, *Sc*₁ ending about opposite one-third the length of *Rs*, *Sc*₂ near its tip; free tip of *Sc*₂ longitudinal in position and a little longer than *R*₂; cell 1st *M*₂ elongate, subequal to vein *M*₁₊₂ beyond it; *m-cu* at fork of *M*, a little shorter than distal section of vein *Cu*₁.

Abdomen, including hypopygium, light brown, the caudal borders of the segments vaguely paler. Male hypopygium with the dorsal dististyle narrower than in *tatei*. Ventral dististyle larger, the rostral prolongation and spines very similar, the latter arising from a common tubercle at extreme base of prolongation. Gonapophyses with mesal-apical lobes appearing as slender, gently curved horns, with a very low flange on margin at near mid-length, the tips acute.

Hab. Ecuador (Oriente).

Holotype, ♂, Baños, Tungurahua, altitude 2000 metres, May 25, 1937 (*Macintyre*).

The nearest relative seems undoubtedly to be the smaller *Limonia* (*Geranomyia*) *tatei* Alexander, of the summit of Mount Roraima, which is distinguished by the wing-pattern and structure of the male hypopygium.

Teucholabis (*Paratropesa*) *subcollaris*, sp n.

General coloration black, without metallic reflections; antennæ black throughout; posterior femora yellow, with narrow brown subbasal and subapical rings; posterior tibiæ brownish yellow; wings whitish subhyaline, patterned with brown, including a darkened area in bases of cells *Cu* and 1st *A* that does not involve cells *R* or *M*; abdominal tergites uniformly black; apical spine of basistyle small and slender.

Male.—Length about 6 mm.; wing 5.5 mm.

Rostrum yellow; palpi dark brown. Antennæ black; flagellar segments oval. Head black, paler on front and occiput.

Pronotum pale yellow. Mesonotum and pleura black, without blue or purple reflections. Halteres with stem brownish black, knob light yellow. Legs with fore and middle coxæ yellow, posterior coxæ darker; trochanters yellow; fore femora black; middle femora yellow; posterior femora yellow, with a narrow dark ring beyond base and a similar narrow ring before apex, both base and tip being narrowly pale; fore tibiæ and tarsi black; middle tibiæ pale brown, the tarsi darker outwardly; posterior tibiæ brownish yellow, tarsi black; posterior basitarsi conspicuously dilated on more than basal half. Wings whitish or very pale yellowish subhyaline, patterned with pale brown; a dark cloud in bases of cells *Cu* and 1st *A*, not involving cells *R* or *M*; a relatively narrow band before and at cord, beginning at the darker brown stigma, completely traversing the wing; outer band involving the broad apex, back to the level of outer end of cell 1st *M*₂; veins dark brown, pale in the whitened prearcular field. Venation: *Sc*₁ ending just beyond origin of the strongly arcuated *Rs*; *R*₂ at fork of *Rs*; *R*₃ present in the left wing of the holotype, entirely atrophied in the right wing; a long fusion of veins *R*₅ and *M*₁₊₂ to beyond mid-length of cell 1st *M*₂; *m-cu* shortly before fork of *M*.

Abdominal tergites black; second sternite with a narrow yellow ring; hypopygium black. Male hypopygium with the apical spine of basistyle small and very slender. Ædeagus terminating in a short, gently curved spine.

Hab. Ecuador (Oriente).

Holotype, ♂, Abitagua, Rio Pastaza, altitude 1200 metres, September 18, 1937 (*Macintyre*).

Teucholabis (*Paratropesa*) *subcollaris* is most similar to *T. (P.) collaris* (Osten Sacken), of Amazonian Brazil, differing in the diagnostic characters given above. It seems certain that several species have been confused under the comprehensive name *collaris*.

Teucholabis (*Teucholabis*) *atripennis*, sp. n.

General coloration of thorax deep reddish brown, abdomen black; halteres black; legs black, the femoral bases pale, most extensively so on posterior legs; posterior tibiæ dilated and pale yellow shortly before tip; wings strongly suffused with blackish, unpatterned;

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Sc ending beyond mid-length of *Rs*; branches of *Rs* parallel to one another; male hypopygium with apical spine of basistyle short, provided with setæ and weak spines; outer dististyle simple; inner dististyle terminating in a simple cultrate blade.

Male.—Length about 7 mm.; wing 7.5 mm.

Rostrum black, nearly equal in length to remainder of head; palpi black. Antennæ black throughout; flagellar segments oval. Head dark.

Mesonotal præscutum deep reddish brown; scutum and scutellum blackened; mediotergite dark, paler on posterior portion. Pleura chiefly deep reddish brown. Halteres black throughout. Legs with coxæ yellowish testaceous; remainder of legs black, femoral bases paler, widest on posterior legs where only the distal fourth is blackened; posterior tibiæ with a narrow, pale yellow, subterminal ring on the dilated portion; posterior tibiæ near tip and basitarsi on proximal third conspicuously dilated. Wings strongly suffused with blackish, the outer radial field somewhat darker; stigma oval, darker brownish black; veins dark brown. Venation: *Sc*₁ ending nearly opposite three-fifths the length of *Rs*; *R*₂₊₃₊₄ about one-third the length of *R*₂; branches of *Rs* parallel to one another for their entire length, cell *R*₂ at margin thus very wide; inner end of cell 1st *M*₂ lying slightly proximad of other elements of cord, *m-cu* shortly beyond fork of *M*.

Abdomen, including hypopygium, black. Male hypopygium with the apical spine of basistyle simple, short and broad at base, terminating in an acute point, the surface of spine with scattered appressed setæ that become longer and more abundant at base of the apical point; mesal edge of spine with a series of serrations. Outer dististyle simple, slightly dilated on basal two-thirds, the apex narrowed; long coarse setæ virtually to the very short apical spine; distal third with a few microscopic appressed denticles. Inner dististyle terminating in a simple cultrate blade, bearing a conspicuous obtuse lobe at base. *Ædeagus* terminating in a long powerful black spine.

Hab. Ecuador (Oriente).

Holotype, ♂, Abitagua, Rio Pastaza, altitude 1200 metres, September 21, 1937 (*Macintyre*).

Teucholabis (Teucholabis) atripennis is closest to species such as *T. (T.) flavithorax* (Wiedemann) and *T. (T.) schineri* Enderlein, differing conspicuously in the venation, coloration of legs, and structure of the male hypopygium.

Teucholabis (Teucholabis) biramosa, sp. n.

Size large (wing, ♂, over 8 mm.); mesonotal præscutum dark reddish brown, scutal lobes and scutellum more blackened; halteres dark; legs black, the femoral bases paler; wings strongly suffused with blackish, variegated by more whitish areas near wing-base and before and beyond cord; stigma and a confluent seam on anterior cord darker; male hypopygium with apex of basistyle produced into a bispinous plate; outer dististyle simple.

Male.—Length about 7.5 mm.; wing 8.5 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, the verticils much exceeding the segments in length. Head black.

Mesonotum almost uniformly dark reddish brown, the scutal lobes and scutellum more blackened. Pleura reddish brown. Halteres blackened. Legs with the coxæ and trochanters reddish brown; femora black, the femoral bases paler; remainder of legs black; posterior tibiæ with dilation shortly before apex. Wings almost uniformly suffused with blackish, the stigma and a confluent seam on anterior cord darker brown; slightly paler areas at wing-base and before and beyond cord; veins black. Venation: Sc_1 ending about opposite two-thirds the length of R_s , Sc_2 shortly before mid-length of R_s ; R_{2+3+4} nearly one-half R_2 alone; cell 1st M_2 nearly as long as vein M_{1+2} beyond it.

Abdomen, including hypopygium, black. Male hypopygium with the basistyle relatively slender, at apex produced into a flattened plate that bears an outer straight spine and an inner, shorter, curved spine; face of basistyle on mesal margin bearing a darkened lobe. Outer dististyle a simple dark rod bearing relatively few setæ and scattered spines. Inner dististyle with the outer apical spine very much larger than the inner. Apex of ædeagus produced into a powerful spine.

Hab. Ecuador (Oriente).

Holotype, ♂, Abitagua, Rio Pastaza, altitude 1200 metres, September 21, 1937 (*Macintyre*).

Teucholabis (*Teucholabis*) *biramosa* is most similar to species such as *T. (T.) flavithorax* (Wiedemann) and *T. (T.) schineri* Enderlein, differing conspicuously in the venation and the coloration of the legs. Very few known species of the genus have the apical spine of the basistyle bifid, as is the case in the present fly.

Teucholabis (*Teucholabis*) *neoleridensis*, sp. n.

Allied to *leridensis*; general coloration of metathorax polished black; prothorax yellow; knobs of halteres yellow; fore femora chiefly blackened, remaining femora yellow; wings with apical cells weakly infumed; a large oval brown cloud on vein *Cu*, occupying both cells *M* and *Cu*; cell *Sc* chiefly dark; stigma and a narrow seam on cord darkened; *Sc* short, *Sc*₁ ending just beyond origin of *Rs*; abdomen polished black, the sternites variegated with yellow; male hypopygium with apical spine of basistyle long and slender; outer dististyle with three strong marginal spines on basal portion, the apex broad, terminating in three or four irregular spines; inner dististyle with apical beak relatively narrow, pendulous; aedeagus with apical lobe truncate at apex.

Male.—Length about 5.5 mm.; wing 5.5 mm.

Rostrum brown; palpi black. Antennæ with scape and pedicel brown, flagellum black; flagellar segments oval, relatively stout, the incisures between segments well-demarcated. Head dark brown in front, more reddish behind.

Prothorax uniformly yellow. Mesothorax almost uniformly polished black, the restricted humeral region of præscutum and lateral ends of suture a trifle more piceous. Pleura without silvery pubescence. Halteres with stem hairy, dark brown, knob yellow. Legs with all coxæ and trochanters yellow; fore femora chiefly black, the bases restrictedly yellow, fore tibiæ and tarsi black; middle and posterior femora yellow, tibiæ brown, tarsi black. Wings with apical cells weakly infumed, the colour extending posteriorly to the end of vein *1st A*; stigma darker brown, confluent with a narrow, somewhat paler seam at cord; cell *Sc*, except outer end, dark brown; a large, oval, pale brown cloud on vein *Cu*, involving cells *M* and *Cu*, extending from veins *M* to *1st A*;

prearcular field restrictedly light yellow; veins dark brown, luteous in the basal portions. Venation: *Sc* short, *Sc*₁ ending just beyond origin of *Rs*, *Sc*₂ not far from its tip and nearly opposite origin of *Rs*; cell *R*₃ strongly widened at outer end by the caudad deflection of vein *R*₅; *m-cu* just beyond fork of *M*.

Abdomen, including hypopygium, polished black; sternites more variegated with yellow. Male hypopygium with apical spine of basistyle long and slender, subequal in total length to the outer dististyle, gradually narrowed to the acute point; inner margin on basal portion fringed with long delicate setæ. Outer dististyle enlarged on basal half, the inner margin with three strong spinous teeth; apical portion narrower, the tip broad, terminating in three or four irregular spines. Inner dististyle with apical beak relatively narrow, pendulous; a setiferous lobe near base of style on outer face. Ædeagus with apical lobe moderately long, the apex truncated or virtually so.

Hab. Ecuador (Tungurahua).

Holotype, ♂, Baños, altitude 2000 metres, May 25, 1937 (*Macintyre*). *Paratopotypes*, 1 ♂, with the type; 1 sex ?, altitude 1800 metres, June 1936 (*Macintyre*).

Teucholabis (*Teucholabis*) *neoleridensis* is very similar to *T. (T.) leridensis* Alexander, of northern Panama, but has the male hypopygium entirely distinct. It is evident that there are several allied species confused with the typical form.

Erioptera (*Empeda*) *longifurcata*, sp. n.

General coloration dark brown to brownish black, including the antennæ, halteres and legs; wings very strongly suffused with blackish; *Sc*₁ ending about opposite mid-length of *Rs*, *Sc*₂ far from its tip, close to origin of *Rs*; cell *R*₃ unusually deep, veins *R*₅ and *R*₄ lying parallel to one another, *R*₃ subequal to vein *M*₄ and nearly one-half longer than *Rs*; male hypopygium with the outer dististyle slender, at beyond mid-length with a small, subacute, lateral branch that is about one-third as long as the apical blade.

Male.—Length about 2.8 mm.; wing 3.5 mm.

Rostrum and palpi black. Antennæ black. Head dull brownish black.

Thorax uniformly dark brown to brownish black. Halteres blackened. Legs with the coxæ dark brown; trochanters obscure yellow; remainder of legs dark brown, provided with setæ and long flattened scales. Wings very strongly suffused with blackish; veins brownish black. All veins beyond cord with complete series of long trichia. Venation: Sc moderately long, Sc_1 ending about opposite mid-length of Rs , Sc_2 far removed from the tip of Sc_1 , close to origin of Rs ; R_2 oblique, a little shorter than R_{2+3+4} ; cell R_3 unusually deep for a member of this subgenus, veins R_3 and R_4 lying parallel to one another, R_3 subequal in length to vein M_4 and nearly one-half longer than Rs ; $m-cu$ at fork of M .

Abdomen black, the hypopygium a trifle brighter. Male hypopygium with the outer dististyle a slender blade, at beyond mid-length bearing a small, subacute, lateral branch that is only about one-third as long as the apical blade beyond its insertion. Inner dististyle long and slender, parallel-sided, the tip obtuse.

Hab. Ecuador (Oriente).

Holotype, ♂, Abitagua, Rio Pastaza, altitude 1200 metres, September 21, 1937 (*Macintyre*).

Erioptera (Empeda) longifurcata much resembles *E. (E.) stygia* Alexander, in the blackened body-coloration and strongly darkened wings. It is readily told from other regional species of the subgenus by the unusually deep cell R_3 and long vein Sc_1 , both characters approaching those of the typical subgenus *Erioptera* to a high degree. It may be noted here that two Argentinian Tipulidæ, originally described as being species of *Rhabdomastix*, *basalis* Alexander and *complicata* Alexander, should be referred to *Empeda*, though aberrant in the normally closed cell 1st M_2 .

Erioptera (Erioptera) celestis, sp. n.

General coloration yellow; thoracic pleura with a narrow, dark brown, longitudinal stripe; legs black, the femoral tips pale; legs with an abundant vestiture of flattened scales; wings yellow, with a brown spotted pattern; some of the wing-trichia modified into slightly flattened scales; male hypopygium with two simple dististyles, the outer with two short curved spines.

Male.—Length about 2.5 mm.; wing 3.2 mm.

Rostrum and palpi black. Antennæ black; basal flagellar segments short and crowded, broader than long, passing through cylindrical to long-cylindrical; basal and intermediate flagellar segments with very long verticils that are approximately one-fourth the length of the entire organ; outer three or four segments attenuated, without verticils. Head dark.

Pronotum with a pendant of silvery hairs overlying back of head. Mesonotum uniformly buffy yellow. Pleura yellow, with a narrow but very conspicuous and well-defined darker brown stripe extending from the pronotum to the base of abdomen, passing beneath the root of halteres. Halteres yellow throughout. Legs with the coxæ pale; trochanters darkened; femora black, the tips narrowly pale, the dark colour produced by abundant long flattened scales; tibiæ and basitarsi similarly darkened by black scales, the extreme tips pale; outer tarsal segments paling to yellow. Wings yellow, with a conspicuous brown pattern consisting of small brown spots, distributed as follows: Sc_2 ; band along cord from tip of Sc_1 to Cu ; marginal spots on all veins from R_{1+2} to 2nd A , excepting R_4 , much larger and more conspicuous on R_{1+2} and R_3 ; a small spot at fork of M_{3+4} ; veins yellow, darkened in the clouded areas, the trichia concolorous with the veins. Trichia of veins elongate, in the outer darkened areas more flattened and approaching scales in appearance. Venation: cell M_2 open by atrophy of m ; vein 2nd A relatively sinuous.

Abdomen, including hypopygium, yellow. Male hypopygium with two elongate, simple dististyles; outer style stouter, nearly straight, at distal end a little expanded and provided with two short curved spines; inner dististyle subequal in length or a little longer, appearing as a curved pale blade, at apex on lower margin with about four small tubercles.

Hab. Ecuador (Oriente).

Holotype, ♂, Abitagua, Rio Pastaza, altitude 1200 metres, April 5, 1937 (*Macintyre*).

The only described near relative is *Erioptera* (*Erioptera*) *lætipleura* Alexander, of southern Mexico, which differs conspicuously in the unpatterned wings and in the structure of the male hypopygium, especially the outer dististyle. The two species form a peculiar isolated group that is

perhaps not strictly a member of the restricted subgenus *Erioptera*.

Erioptera (Mesocypbona) caloptera subevanescens, subsp. n.

Characters as in typical *caloptera* Say, differing in the pattern of the legs. Femora with the dark rings very reduced, especially the outer one, which is about one-half as wide as the pale apex; subbasal ring variable in extent, present or lacking, when preserved much wider than the subterminal ring, the space between the two darkened annuli extensive, being four or five times the width of the outer ring.

Hab. Ecuador (Oriente).

Holotype, ♂, Abitagua, altitude 1200 metres, April 7, 1937 (*MacIntyre*).

Allotopotype, ♀. *Paratopotypes*, 2 ♀♀, April 5-7, 1937.

Cryptolabis (Cryptolabis) laticostata, sp. n.

Size large (wing, ♀, over 6 mm.); general coloration of notum black; pleura yellow; halteres pale throughout; legs brown, the femoral bases paler; wings bicolorous, strongly infumed, the prearcular field and broad costal margin whitened; *Rs* long and sinuous; abundant macrotrichia in distal half of wing; abdomen dark throughout.

Female.—Length about 5.5 mm.; wing 6.4 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, verticils elongate. Head dull black.

Pronotum dark; anterior lateral pretergites yellow. Mesonotum almost uniformly black, the humeral and posterior regions of præscutum and median area of scutum more reddish brown. Pleura and pleurotergite yellow. Halteres pale throughout. Legs with the coxæ and trochanters yellow; remainder of legs brown, the femoral bases paler. Wings bicolorous, the ground-colour strongly infumed, the broad costal border as far distad as level of cord whitened; prearcular field similarly white; anal cells slightly whitened, the axilla narrowly clouded, connected with the outer ground-colour in cell *M*; veins brown, pale in the whitened areas. Macrotrichia of cells abundant, occupying the distal half of wing.

Venation: *Rs* long and sinuous, exceeding in length vein *R*₃.

Abdomen dark brown throughout.

Hab. Ecuador (Oriente).

Holotype, ♀, Abitagua, altitude 1200 metres, September 21, 1937 (*Macintyre*).

Cryptolabis (*Cryptolabis*) *laticostata* is very distinct from all previously-described species. It is closest to *C. (C.) schadei* Alexander, of southern Brazil, but differs conspicuously in the size, and in the pattern of the legs and wings.

XXIV.—*A List of the Type-hosts of the Mallophaga and the Lice described from them* *. By GORDON B. THOMPSON.

[Continued from p. 55.]

Order CICONIIFORMES.

Suborder ARDEÆ.

Family Ardeidæ.

Subfamily ARDEINÆ.

148. *Ardea cinerea cinerea* Linn.

Colpocephalum decimfasciatum Boisduval & Lacordaire, 1835. On *Ardea cinerea* from France.

Colpocephalum importunum Nitzsch in Denny, 1842.

On *Ardea cinerea* from Britain.

Ardeicola ardeæ (Linn.), 1758. On *Ardea cinerea*, no locality.

Ardeicola leucopyga (Nitzsch in Burmeister), 1838.

On *Ardea cinerea*, no locality.

Ardeicola phœnicopteri (Macalister), 1871, *nec Lipeurus phœnicopteri* Coinde, 1859. True host, described from straggler on *Phœnicopterus ruber* Linn., no locality.

149. *Ardea purpurea purpurea* Linn.

Ardeicola leucoprocta (Nitzsch in Giebel), 1866.

On *Ardea purpurea*.

* *Note*.—It must be borne in mind when using this list that the type-hosts of the various species of Mallophaga are not fixed but only listed.