

RECORDS AND DESCRIPTIONS OF NEOTROPICAL CRANE-FLIES (TIPULIDÆ, DIPTERA), XXI

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AMHERST, MASSACHUSETTS

The previous part under this title was published in December, 1945 (JOURNAL OF THE NEW YORK ENTOMOLOGICAL SOCIETY 53 (4): 279-291). The majority of the species discussed at this time were taken in Dutch Guiana by Dr. D. C. Geijskes and in Bolivia by Mr. Francisco Steinbach. A few additional species from other sources are mentioned in the text. I wish to acknowledge my appreciation and deepest thanks to all of the entomologists and collectors who have aided so materially in making known the rich Tropical American crane-fly fauna. The types are preserved in my large collection of World Tipulidæ.

Genus *Holorusia* Loew

Holorusia (*Holorusia*) *luteivena* new species.

Size large (wing, male, 27 mm.); mesonotum light brownish yellow, the præscutum with four scarcely darker brown stripes that are narrowly margined brown; dorsopleural region light yellow, margined beneath by a more brownish stripe; antennæ relatively short and stout, obscure yellow; wings dirty yellow and gray, restrictedly patterned with darker, the veins and adjacent membrane restrictedly yellow; vein R_3 with macrotrichia; R_s elongate, exceeding twice $m-cu$; M_{3+4} short, less than $r-m$; abdomen almost uniformly brown, without a darkened subterminal ring; male hypopygium with the caudal margin of the ninth tergite four-lobed; outer dististyle broadly flattened, near apex with numerous small denticles; inner dististyle with the blackened peglike spines relatively few in number.

MALE.—Length about 25 mm.; wing 27 mm.; antenna about 5 mm.

Frontal prolongation of head obscure yellow, sparsely pruinose, especially at base, nearly equal in length to the remainder of head; nasus stout, darkened; palpi dark brown, the terminal segment a trifle paler. Antennæ obscure yellow, relatively stout; second flagellar segment a little bulging on proximal half; succeeding segments subcylindrical; outer three or four segments strongly narrowed, all but the last a little dilated at base. Head light brown, the anterior vertex with indications of a narrow darker line.

Pronotal scutum darkened medially, the remainder of notum yellow. Mesonotum light brownish yellow, with four scarcely indicated darker stripes,

differentiated chiefly by narrow and inconspicuous brown margins; cephalic and humeral portion of præscutum narrowly brownish black; transverse suture narrowly blackened, especially at the point; scutal lobes weakly darkened, the median area broadly pale; scutellum brownish gray, with indications of a capillary median brown line, parascutella more darkened; mediotergite obscure yellow, more infuscated laterally with a capillary brown median line; pleurotergite chiefly obscure yellow. Pleura with a broad dorsal yellow stripe extending from the pronotum over the extensive dorsopleural membrane to the wing-base; immediately below this stripe with a brown longitudinal stripe, its ventral portion merging into the more grayish ventral pleurites. Halteres obscure yellow, knob darker, the apex pale. Legs with the coxæ brownish gray, with long pale setæ; trochanters obscure yellow; femora light brown; tibiæ and proximal segments of tarsi paler, outer tarsal segments passing into brownish black; claws (male) bidentate, the basal spine small and slender. Wings with the ground color of the cephalic half dirty yellow, of the posterior half more grayish; a restricted darker pattern, including the cephalic preareolar field and bases of cells R , M and Cu_1 ; a small but darker brown spot at origin of R_s ; stigma paler brown; veins at and near cord, together with the posterior wing margin narrowly seamed with brown, the latter interrupted by yellow spots at end of vein *1st A* and again just beyond vein *2nd A*; similar whitish spots before stigma and at base of cell *1st M*₂; veins and the membrane immediately adjacent restrictedly yellow, contrasting with the ground. Base of vein R_{1+2} and about the proximal two-thirds of R_3 with macrotrichia, the latter totalling about 18; remaining veins behind R glabrous. Venation: R_s elongate, exceeding twice $m-cu$ and more than three times R_{2+3} ; veins R_3 and R_{4+5} only slightly sinuous, cell R_3 at mid-length about two-thirds as wide as at base; petiole of cell M_1 slightly more than one-half m ; M_{3+4} short, less than the oblique $r-m$, $m-cu$ at the fork.

Abdomen almost uniformly light brown, without a darkened subterminal ring. Male hypopygium with the ninth tergite broad, its caudal margin conspicuously four-lobed, the lateral lobes small and narrow, the submedian pair shorter but broader, all lobes with blackened spinous setæ. Outer dististyle broadly flattened, more or less scoop-shaped, the tip obtuse; outer surface with abundant long dark setæ; apical border of the outer scooplike portion with numerous small points or denticles. Inner dististyle not much more extensive than the outer style; beak stout, obtuse at apex; areas of peglike spines unusually reduced, both in area and number of spines.

Holotype, ♂, Chapare, Cochabamba, Bolivia, November 1934 (Francisco Steinbach).

Holorusia (Holorusia) luteivena is quite distinct from other large regional species. The nearest relatives seem to be forms such as *H. (H.) flavicornis* Alexander and *H. (H.) lassula* Alexander, which differ in the coloration of the body and wings, structure of the antennæ, and details of the male hypopygium.

Holorusia (Holorusia) cristobtusa new species.

Size relatively large (wing, male, 23 mm. or more); mesonotal præscutum with four grayish stripes that are narrowly bordered by brown; thoracic pleura striped longitudinally with brown; femora brownish yellow, the tips conspicuously blackened; wings with the cells basad of cord chiefly yellowed, beyond cord weakly infuscated; a restricted brown and pale pattern; male hypopygium with the caudal margin of tergite bilobed, the lobes broad, with long black setæ; outer dististyle broad; inner dististyle with the dorsal crest low and broadly obtuse, with scattered pale setæ.

MALE.—Length about 19–20 mm.; wing 23–24.3 mm.; antenna about 7–8 mm.

FEMALE.—Length about 20–22 mm.; wing 25–26 mm.; antenna about 4 mm.

Dorsal half of frontal prolongation of head yellow, including the elongate simple nasus, the sides dark brown; palpi brownish black, the extreme bases of the more proximal segments pale; terminal segment elongate, basal half brownish black, the apical half pale yellow. Antennæ of male relatively long; scape yellow, pedicel testaceous yellow, flagellum black, segments nearly cylindrical, elongate; antennæ of female much shorter and paler, the flagellum very weakly bicolored, the bases of the segments being a trifle darker than the tips. Head obscure yellow in front, more infuscated on vertex, all heavily light gray pruinose.

Pronotum pale yellow, whitish pruinose, narrowly darkened medially above. Mesonotal præscutum with the ground color obscure brownish yellow, the posterior interspaces before the suture restrictedly yellow; four gray stripes that are narrowly bordered by brown, the mesal edges of the intermediate pair confluent in front to form a broader median brown vitta; scutum with the median region and the posterior portions of the lobes obscure yellow, the remainder of lobes with two relatively small gray areas that are narrowly bordered by brown; scutellum infuscated, sparsely pruinose, parascutella obscure yellow, the mesal ends more darkened; mediotergite pale brown, its posterior portion more yellowed. Pleura with a broad dorsal yellow stripe, the ventral sclerites more grayish yellow, with a broad but relatively inconspicuous reddish brown longitudinal stripe, narrower and darker on the cervical region and propleura, most extensive on the anepisternum, becoming narrowed and finally obsolete behind. Halteres yellow, the knobs weakly darkened. Legs with the coxæ and trochanters yellow, the extreme bases of the former a trifle darker; femora obscure brownish yellow, the tips rather broadly and conspicuously blackened; tibiæ brown with the tips more narrowly blackened; tarši brownish black; claws (male) bidentate. Wings with the ground color before cord extensively yellowed, beyond the cord weakly infuscated, with a restricted dark pattern; pre-arcular area and cell *Sc* pale brown; stigma, a small spot over origin of *Rs* and broad continuous seams along veins *Cu* and *m-cu* darker brown; paler brown clouds over anterior cord and outer end of cell *1st M*₂; cells beyond cord with vague yellowed areas, with similar brightenings in the anal cells,

extensively so on more than the basal halves of the cells; veins brown. Three or four scattered trichia on vein R_3 . Venation: R_s nearly twice $m-cu$; cell R_2 only moderately constricted at midlength; cell 1st M_2 pentagonal, pointed at its outer end.

Basal abdominal tergites of male obscure orange yellow, with vague indications of a median brown stripe; basal lateral portions of segments more yellowed, the posterior lateral angles weakly darkened; basal sternites chiefly orange-yellow; subterminal segments blackened to form a broad ring; hypopygium obscure yellow. In female, tergites more heavily trivittate with darker brown. Male hypopygium with the posterior margin of tergite produced into two large lobes that are separated by a V-shaped notch, the vestiture of the lobes consisting of long black setæ, not at all modified into spines, denser near tips of lobes. Outer dististyle broad, pale, the apex directed laterad and strongly truncated at apex but not toothed. Inner dististyle much larger, the short beak squarely truncated at apex, the widely separated lower beak more obtuse; both beaks with extensive groups of small blackened peglike spines or knobs that extend backward onto the face of style; dorsal crest very low and broadly obtuse, entirely pale, provided with scattered pale setæ.

Holotype, ♂, Buenavista, Santa Cruz, Bolivia (Francisco Steinbach). Allotype, ♀, Chapare, Cochabamba, Bolivia, November 1934 (Steinbach). Paratopotype, 1 ♂; paratype, 1 ♀, 1 broken ♂, with the allotype.

The present fly appears closest to species such as *Holorusia* (*Holorusia*) *flavicornis* Alexander, *H. (H.) lassula* Alexander, and others, differing markedly in the pattern of the body and wings, and, especially, in the structure of the male hypopygium.

***Holorusia* (*Holorusia*) *crystalta* new species.**

Size medium (wing, male, about 15 mm.); mesonotal præscutum almost uniformly light brown, virtually unpatterned; pleura and pleurotergite uniformly yellow; wings with the cephalic half and cells beyond cord more infuscated than the posterior basal cells; a small quadrate brown spot at near midlength of cell M ; $m-cu$ at near midlength of M_{3+4} ; abdominal tergite reddish brown, with a subterminal dark brown ring involving most of segments six to eight; male hypopygium with the tergal lobes large, the median lobule lacking or virtually so; outer dististyle elongate, simple; inner dististyle with the beak cultriform; dorsal crest very high.

MALE.—Length about 12–13 mm.; wing 15–16 mm.; antenna about 3–3.1 mm.

Frontal prolongation of head brownish yellow; nasus very long and slender; palpi brownish yellow. Antennæ moderately long; basal three segments yellow; succeeding segments bicolored, brown basally, with about the outer half obscure yellow; outer segments broken. Head brown.

Thoracic dorsum almost uniformly light brown, the præscutum virtually unpatterned; scutum slightly darker on central portion and the outer edges of the lobes, the centers of the latter slightly paler; scutellum with a slight basal darkening; mediotergite with a more or less distinct darkening on either side of the broad paler central area. Pleura and pleurotergite uniformly yellow, unpatterned. Halteres infuscated, the base of stem narrowly yellow; remainder of legs light brown or yellowish brown, the outer tarsal segments passing into black; claws (male) bidentate. Wings with about the cephalic half and the cells beyond the cord weakly infuscated, the posterior cells before cord paler, this including most of *M* and the remaining basal cells; prearcular field and costal border, especially cell *Sc*, darker brown; stigma dark brown; a relatively conspicuous brown cloud at near midlength of cell *M*; veins dark brown. Veins beyond cord glabrous. Venation: *Rs* relatively long, strongly arcuated at origin, about one-third longer than *m-cu*; cell *R*₃ constricted at near midlength; *m-cu* at near midlength of *M*₃₊₄.

Basal abdominal tergites reddish brown, more darkened sublaterally; segments six to eight more darkened, to form a more or less distinct subterminal ring, the bases of tergites six and seven narrowly yellow, the apex of sternite eight similarly patterned; hypopygium yellow. Male hypopygium relatively large. Ninth tergite with the caudal margin produced into large and conspicuous lateral lobes but with the median area only slightly produced, not forming a central lobule as in allied species; setæ of lobes relatively long and slender, scarcely spinous; extreme central portion of notch without setæ. Outer dististyle elongate, particularly on the outer two-fifths, not provided with lobes or projections. Inner dististyle with the beak cultriform, the extreme lower apical angle a trifle decurved; dorsal crest unusually high, its apex truncated; cephalic portion of crest with numerous setæ, these sparse or lacking on the posterior border; blackened spinous points in two areas, the outer larger and with the spicules more numerous.

Holotype, ♂, Buenavista, Santa Cruz, Bolivia (Francisco Steinbach). Paratopotype, ♂.

This fly is most similar to species such as *Holorusia* (*Holorusia*) *lævis* Alexander, *H. (H.) ringens* Alexander, *H. (H.) tarda* Alexander, and allies, differing from all in the structure of the male hypopygium, especially the tergite and inner dististyle.

Genus *Pectinotipula* Alexander

***Pectinotipula boliviensis* new species.**

Size large (wing, 20 mm. or more); antennal flagellum strongly bicolored; head and thorax with a continuous dorsomedian brown stripe; wings fulvous brown, variegated with darker brown and pale yellow areas, the latter including a conspicuous post-stigmal band extending from costa

obliquely backward through cell *1st M*₂ into the base of *M*₃; male hypopygium with the appendage of the eighth sternite unusually large and broad, approximately four times as long as the greatest width.

MALE.—Length about 17–18 mm.; wing 20–21 mm.; antenna about 7 mm.

FEMALE.—Length about 26–27 mm.; wing 22–23 mm.; antenna about 4 mm.

Frontal prolongation of head above yellow, including nasus; sides of prolongation weakly more infuscated; palpi black. Antennæ of male with basal three segments yellow, succeeding segments bicolored, the base and branches black, the stems yellow, the terminal segment paler yellowish brown; branches subequal to or a trifle longer than the segments; in female, antennæ simple; basal four segments yellow, succeeding segments bicolored, dark on basal half or less, the apex yellow. Head above buffy yellow, sides of the posterior vertex weakly darkened; a capillary dark brown median vitta.

Pronotum buffy, narrowly darkened medially, more extensively so on the sides. Mesonotal præscutum chiefly covered by four buffy gray stripes, the intermediate pair separated by a continuous median dark brown line; interspaces with conspicuous brown setigerous punctures; humeral and lateral portions of præscutum less strongly infuscated, the latter with a few setigerous punctures; scutal lobes chiefly gray, the median line narrowly dark brown; posterior sclerites of notum gray, the scutellum at base extensively infuscated; mediotergite with a narrow brown central vitta. Pleura and pleurotergite yellow. Halteres infuscated, base of stem yellow. Legs yellow, the femora with a nearly terminal brown ring, the tibiæ with the tips weakly infuscated; tarsi yellowish brown, passing into dark brown or brownish black; claws simple. Wings chiefly fulvous brown, variegated with darker brown and pale yellow areas; the darker clouds include the stigma and two areas in the subcostal cell, the outermost at origin of *Rs*; other brown clouds at arculus, in basal half of cell *Cu*, in outer half of cell *M* adjoining vein *Cu*, and as a seam along the distal section of vein *Cu*; the yellow areas occur as a post-stigmal band extending through cell *1st M*₂ into the base of cell *M*₃, more conspicuous in female; basad of cord these areas more extensive, especially in cells *M*, *Cu* and *1st A*; in male, outer cells uniformly darkened; in female, outer end of cell *R*₅ more or less brightened; veins brown, yellow in the pale portions. Venation: *R*₁₊₂ entire; *Rs* more than one-half longer than *m-cu*; petiole of cell *M*₁ subequal to or shorter than *m*.

Abdominal tergites fulvous yellow, more darkened on sides; subterminal segments more darkened to form a narrow ring; sternites and hypopygium more uniformly yellow. Ovipositor with cerci slender, long and straight. Male hypopygium of the usual type of the genus, differing in details of the inner dististyle, gonapophyses and appendage of the eighth sternite. Inner dististyle large and ample, the margin of the beak and the outer crest heavily blackened. Gonapophyses of distinctive shape, each profoundly bilobed, the outer lobe an irregularly flattened yellow blade, the inner lobe

a slender arm that is slightly expanded at outer end. Appendage of eighth sternite an unusually large and conspicuous depressed-flattened lobe, its length about four times the greatest width.

Holotype, ♂, Chapare, Cochabamba, Bolivia, November 1934 (Francisco Steinbach). Allotopotype, ♀. Paratopotypes, 1 ♂, 3 ♀♀, with the type; paratypes, 2 ♂♂, 2 ♀♀, Buenavista, Santa Cruz, Bolivia, February 1929 (Steinbach).

The species is quite distinct from the other members of the genus in the pattern of the wings and in the details of structure of the male hypopygium. It should be emphasized that the wing pattern in the female is much more variegated than in the male.

***Pectinotipula tucumana* new species.**

MALE.—Length about 17 mm.; wing 18 mm.; antenna about 6.2 mm.

Characters generally as in *argentina*. Antennæ with the outer two or three flagellar segments uniformly darkened. Head above, with the dorsal half of the frontal prolongation, clear light gray, the ventral portion of the latter more infuscated; palpi black; capillary darkening on vertex so reduced as to be virtually lacking.

Mesonotum with the median brown vitta conspicuous, the lateral præscutal stripes very reduced. Halteres with stem yellow, knob infuscated. Legs with the femoral tips narrowly dark brown, apical in position. Wings chiefly brownish yellow, very weakly patterned with darker and whitish subhyaline; the former includes the stigma, a seam over the anterior cord, and tiny brown areas at origin of *Rs* and the end of *Sc*; darkenings in cell *Sc* reduced to virtually lacking; the whitish marks are fully as restricted, including the distal half of cell *R*₅, very narrow obliterative lines before stigma and across cell 1st *M*₂; an oblique line at near two-thirds the length of cell *M*, and vague brightenings in bases of cells *Cu* and 1*A*; veins brown, more brownish yellow in the subcostal field. Venation: *R*₁₊₂ entire; *Rs* about twice *m-cu*; petiole of cell *M*₁ somewhat longer than *m*.

Abdomen yellow, the tergites narrowly trivittate with brown, the sub-lateral stripes extensively interrupted at the incisures; the broader median vitta very narrowly broken by pale caudal borders to the segments. Male hypopygium with the outer dististyle slender, narrowed outwardly and here with long yellow setæ. Inner dististyle with the margins of the dorsal and posterior crests narrowly blackened, the latter conspicuously produced. Gonapophyses distinctive, each dilated at outer end. Appendage of eighth sternite unusually narrow, broadest on less than the basal half, thence abruptly narrowed to approximately one-half the width across base (extreme tip of appendage broken).

Holotype, ♂, Quebrada Famailá, Tucuman, Argentina, altitude 1600 meters, October 15, 1920 (Vladimir Weiser).

The present fly differs from what I have determined as being *Pectinotipula argentina* (van der Wulp), in the details of coloration of the body and wings and in the structure of the male hypopygium, particularly the inner dististyle, gonapophysis and appendage of the eighth sternite.

Genus *Limonia* Meigen

***Limonia (Limonia) pugnax* new species.**

Size medium (wing male, 7 mm.); general coloration obscure yellow, the præscutum and scutal lobes conspicuously polished black; antennal flagellum black, the segments with obscure yellow glabrous apical stems; femora obscure yellow, the tips narrowly darkened; wings with a weak brownish tinge, very restrictedly patterned with darker; *Sc* relatively long, *Sc*₁ ending about opposite three-fifths *Rs*; *m-cu* about one-fourth its length before the fork of *M*; male hypopygium very large and complex; ninth tergite shield-shaped in outline, its outer median portion produced caudad into a setiferous lobe; dististyle very complex, consisting of an outer pale lobe and two inner blackened lobes.

MALE.—Length about 7 mm.; wing 7 mm.

Rostrum brownish black, relatively short; palpi black. Antennæ black, the stems of most of the flagellar segments obscure yellow to produce an inconspicuous bicolored appearance; apical stems glabrous, more abrupt in the proximal segments; longest verticils subequal in length to the segments. Head above gray, the anterior vertex reduced to a capillary line that is only about as wide as a single row of ommatidia; eyes correspondingly large, the ommatidia coarse.

Pronotum infuscated above, obscure yellow on sides, the setæ long and conspicuous. Mesonotum chiefly yellow, the surface more or less polished; præscutum with a polished black median triangle on the cephalic half, lateral præscutal borders more weakly infuscated; scutal lobes conspicuously blackened. Pleura, especially the propleura, more or less darkened. Halteres blackened, base of stem restrictedly yellow. Legs with the coxæ yellow, the fore pair a trifle darker; trochanters yellow; femora obscure yellow, the tips narrowly and inconspicuously darkened, the amount subequal on all legs; tibiæ and basitarsi yellowish brown to light brown, the outer tarsal segments blackened. Wings with a weak brownish tinge, very restrictedly patterned with darker, including the small oval stigma; very inconspicuous darkened clouds over origin of *Rs*, cord and outer end of cell 1st *M*₂; veins brownish yellow, macrotrichia black. Venation: *Sc*₁ ending about opposite three-fifths the length of *Rs*, *Sc*₂ near its tip; *Rs* relatively long, about two and one-half times the basal section of *B*₄₊₅; cell 1st *M*₂ small, short-rectangular, about equal to the distal section of vein *M*₃; *m* arcuated, shorter than the straight basal section of *M*₃; *m-cu* about one-fourth its length before the fork of *M*.

Abdominal tergites weakly infuscated, basal sternites more yellowed; outer segments, including the hypopygium, chiefly brownish yellow, the dististyles more blackened. Male hypopygium very large and conspicuous. Ninth tergite suboval or shield-shaped in outline, the caudal border truncate, its median portion further produced caudad into a conspicuous depressed-flattened lobe that is tufted with long yellow setæ. Basistyle large, closely applied or fused to the tergite; ventromesal lobe subapical in position, tufted with setæ. Dististyle very complex, consisting of an outer oval pale lobe, provided with abundant setæ, about six at and near apex much larger; inner portion of style produced into two separate blackened lobes, the outer with very appressed retrorse teeth along its face; lower or more cephalic lobe similarly blackened, its outline irregular. Gonapophysis with mesal-apical lobe unusually long and straight, the extreme outer lateral angle pointed but pale.

Holotype, ♂, Dutch Guiana, Sectie O, in bush, June 7, 1944 (Geijskes). Sectie "O" is on the railroad line some 30 miles south of Paramaribo.

Limonia (Limonia) pugnax is a very distinct fly that cannot be confused with any other. Of all the described species, the only one that at all resembles this fly is *L. (L.) somnifica* Alexander, of southern Ecuador, which has certain features of the dististyle of the male hypopygium somewhat as in the present insect but which is entirely distinct in the other structures of the hypopygium and of the antennæ.

***Limonia (Rhipidia) surinamica* new species.**

Allied to *pallatangæ*; general coloration of thorax pruinose, the central stripe of the præscutum and the scutal lobes more chestnut brown; antennæ (male) with flagellar segments relatively short-unipectinate, the branches shorter than the segments; thoracic pleura dark brown, pruinose, with a narrow, darker brown, dorsolongitudinal stripe; legs with the femora and tibiæ more or less blackened, the amount of yellow differing on the various legs; all outer segments of all tarsi blackened; wings narrow, pale brown, conspicuously patterned with darker brown and whitish subhyaline areas; *Sc* relatively short, *Sc*₁ ending about opposite two-fifths the length of *Rs*; *m-cu* about two-thirds its length before the fork of *M*; male hypopygium with two short rostral spines.

MALE.—Length about 7.5 mm.; wing 8.1 × 1.8 mm.

Rostrum dark brown; palpi black. Antennæ black, the terminal flagellar segments broken (before breaking it was observed that the entire organ, including the apical stems of all flagellar segments, was black); flagellar segments relatively short-unipectinate; first flagellar segment produced into a broad lobe that is about one-half the length of segment; succeeding

segments with the branch a little shorter than the segment, the glabrous apical stem elongate; each flagellar segment with a single unusually long seta on outer face at base, this about twice the segment. Head above gray, slightly impressed medially; anterior vertex obliterated for a considerable extent, the eyes contiguous or virtually so.

Cervical sclerites light brown; pronotum darker brown medially, paler and more pruinose on sides. Mesonotal præscutum gray pruinose, with a dark chestnut brown median stripe, this in turn narrowly more darkened, especially on anterior portion; lateral borders darkened, the broad interspaces obscure yellow, the whole surface excepting the median stripe more or less pruinose, especially conspicuous when viewed from above; scutal lobes extensively chestnut brown, still darker on the cephalic and lateral portions; median region of scutum and scutellum more testaceous yellow, the lateral portions of the latter darker; parascutella yellow, the posterior margin narrowly more darkened; postnotum brown, pruinose. Pleura dark brown, gray pruinose, with a narrow but conspicuous blackened longitudinal stripe extending from the sides of the pronotum across the dorsal pleurites to the base of the abdomen, passing above the root of the halteres. Halteres infuscated, apex of knob obscure yellow. Legs with coxæ chestnut brown, the posterior pair darker; trochanters yellow; femora blackened, the bases more or less yellow; all legs are detached but one pair, presumably the fore legs, has the femora almost uniformly darkened, with only the bases narrowly yellow; remaining legs with femora chiefly yellow, with about the distal fourth blackened; the assumed fore leg with the tibiæ and basitarsi obscure yellow, the tips blackened; remaining tibiæ darker, those of the assumed posterior legs almost uniformly blackened; terminal tarsal segments of all legs blackened. Wings unusually narrow, as shown by the measurements; ground color pale brown, conspicuously variegated by darker brown and whitish subhyaline or cream-colored areas; the darker markings include three or four areas in the costal field, the largest at and beyond the level of the arculus, the one above the origin of *Rs* small; fourth spot at fork of *Sc*; stigma darkened, the center restrictedly paler; narrow brown seams along cord, outer end of cell 1st M_2 and as small marginal markings at ends of the longitudinal veins, especially R_3 and the anals; the cream-colored areas are spread over much of the wing, especially in the costal interspaces and at the wing apex to beyond the actual tip; axilla and posterior preareolar field conspicuously whitened; veins pale brown, darker in the patterned areas, yellow in the pale markings, the latter including the conspicuously brightened costa and the interspaces of *Sc* and *R*. Venation: *Sc* relatively short, Sc_1 ending about opposite two-fifths the length of *Rs*, Sc_2 at its tip; *Rs* relatively long, nearly twice R_{2+3} ; cell 1st M_2 elongate, nearly equal to the distal section of M_{1+2} ; *m-cu* about two-thirds its length before the fork of *M*.

Abdominal tergites brown, the basal segment brighter, the outer segments somewhat paler brown; sternites yellow; hypopygium brownish yellow. Male hypopygium with the tergite relatively large, narrowed outwardly, the pos-

terior margin convexly rounded or very shallowly emarginate medially. Basistyle with ventromesal lobe of moderate size, provided with long pale setæ. Dorsal dististyle very gently curved, the tip suddenly narrowed into a long straight black spine. Ventral dististyle of moderate size fleshy, its area about twice that of the basistyle; rostral prolongation relatively long and slender; rostral spines two, placed at near midlength, short, slightly separated from one another; apex of prolongation beyond the outermost spine nearly twice the length of the latter; apex of prolongation obliquely truncated, the lower angle more or less produced; near apex with two strong curved yellow setæ. Gonapophysis with mesal-apical lobe elongate, gently curved, the tip blackened and subacute; lateral margin back from the apex with small denticles.

Holotype, ♂, Brownsberg, Dutch Guiana, altitude 400 meters, September 16, 1938 (Geijskes). Brownsberg is about 50 miles south of Paramaribo, near the railroad line.

The most similar species is evidently *Limonia* (*Rhipidia*) *pallatangæ* (Alexander), which has the wings much broader, distinctively patterned, and differs further in the coloration of the body and legs and in the details of structure of the male hypopygium.

***Limonia* (Peripheroptera) lankesteri** new species.

Size relatively large (wing, male, over 11 mm.); general coloration of thorax fulvous yellow, patterned with black, especially on the mesoscutal lobes; legs yellow, the tips of the femora and tibiæ blackened; wings rich yellow, the costal fourth even more saturated, the disk with a conspicuous dark brown pattern including the cord and seams along the outer veins; R_1 unusually elongate; cell 1st M_2 long and narrow, the second and third sections of vein M_{1+2} subequal in length.

MALE.—Length about 7 mm.; wing 11.5 mm.

The type is badly crushed and the thoracic coloration can be described in general terms only.

Rostrum and palpi black. Antennæ black throughout; flagellar segments elongate-oval to subcylindrical, with verticils that exceed the segments. Head silvery gray pruinose.

Thorax chiefly fulvous yellow, patterned with black on the scutal lobes above the wing root and less evidently darkened elsewhere. Halteres yellow, knobs brownish black. Legs with the coxæ infuscated; trochanters obscure yellow; femora yellow, the tips broadly and conspicuously blackened, the amount subequal on all legs; tibiæ more obscure yellow, the tips more narrowly blackened; tarsi short, black. Wings with the ground color rich yellow, the costal fourth more saturated fulvous yellow; wing-base narrowly but conspicuously dark brown; a further dark brown pattern, as follows: At arculus, the color continued distad in cell R for nearly one-third

the length of vein M ; a cloud over the interanal crossvein; markings over Sc_2 , free tip of Sc_2 , and a common cloud over R_2 and the surrounding membrane; cord and outer end of cell 1st M_2 seamed with brown; certain of the veins beyond the cord, especially R_{4+5} , distal sections of M_{1+2} , M_3 and M_4 similarly bordered; veins light brown, darker in the patterned areas, more fulvous brown in the costal interspaces. Venation: Sc_2 at near mid-distance between arculus and origin of R_3 ; free tip of Sc_2 transverse, far before R_2 ; vein R_1 only a little shorter than the section of vein M_{1+2} ; cell 1st M_2 unusually long and narrow, the second and third sections of M_{1+2} subequal; $m-cu$ about one-third its length beyond the fork of M ; cell 2nd A long and narrow, the narrowest point about one-half that of the widest.

Abdomen with the tergites weakly bicolored, black, the caudal borders of the segments obscure yellow; sternites more uniformly obscure brownish yellow; hypopygium and preceding segment yellow, the ventral dististyle abruptly dark brown.

Holotype, a badly crushed ♂, Hacienda "Las Cónovas," Cartago, Costa Rica, altitude 1360 meters, May 19, 1945 (C. H. Lankester); picked from flowers of *Cattleya Dowiana* Batem. (Orchidaceæ).

This attractive fly is named for the collector, Mr. C. H. Lankester. The species is very different from the other regional members of the subgenus so far described, including *Limonia* (*Peripheroptera*) *atrosignata* Alexander. The large size, coloration of the body and wings, and the venation, as the unusually long vein R_1 and cell 1st M_2 , provide strong characters.

Genus *Ctenolimnophila* Alexander

***Ctenolimnophila* (*Ctenolimnophila*) *fuscoanalisis* new species.**

Allied to *decisa*; general coloration of the entire body brownish black; tarsi very short, only about one-sixth the length of tibiæ; wings infuscated, patterned with darker brown and pale yellow areas, the latter appearing as four marginal marks from beyond the fork of Sc to the wing-tip in cell R_4 ; darker spots over the cord; outer end of cell 1st M_2 and elsewhere; conspicuous darkened areas at ends of both anal veins; a supernumerary crossvein in cell R_3 near outer end; cell 1st M_2 irregularly elongate; $m-cu$ about three-fourths its length beyond the fork of M ; both anal veins curved strongly into the margin, 2nd A tending to be angulated and weakly spurred near tip.

FEMALE.—Length about 5.5–6 mm.; wing 4.8–5 mm.

Rostrum and palpi black. Antennæ with scape and pedicel black; first flagellar segment yellow, remainder of flagellum pale brown; flagellar segments short-oval, the outer ones a little more elongate. Head dark brown; anterior vertex (female) broad, about four times the diameter of scape.

Thorax almost uniformly brownish black, the pronotal scutellum restrictively paler; upper portion of dorsopleural membrane slightly paler brown. Halteres with stem obscure brownish yellow, knob blackened. Legs with coxæ dark brown; trochanters yellow; remainder of legs yellow, the outer tarsal segments a little darker; tarsi very short, the basitarsi only about one-half longer than the second segment, the entire tarsus only about one-sixth as long as the tibia; tibial spurs present. Wings with the ground infuscated, patterned with darker brown and pale yellow or whitish areas, the latter occurring as four marginal marks just beyond the fork of *Sc*, in cell R_2 in cell *2nd R*₃ and a very small apical area in cell R_4 ; the darker markings include a postarcular area and spots at origin of *Rs*, cord, stigma, fork of R_{2+3+4} , tip of R_3 and over the supernumerary crossvein in cell R_3 , tip of R_4 , both outer elements closing cell *1st M*₂ and spots at ends of both anal veins; slightly paler washes in cell *R* before origin of *Rs* and again before the cord; in base of cell R_1 , most of cell *1st M*₂ and bases of cells *2nd M*₂ and M_3 ; prearcular field chiefly darkened; a restricted brightening at the arculus; veins brown, *Sc* somewhat paler. Venation: Sc_1 ending immediately before fork of *Rs*, Sc_2 at its tip; *Rs* angulated and spurred at origin; a supernumerary crossvein in outer end of cell R_3 ; cell *1st M*₂ irregularly elongate, basal section of M_3 about three times *m*, the cell much longer than any of the veins beyond it; *m-cu* about three-fourths to four-fifths its length beyond the fork of *M*; both anal veins curved strongly into the margin, *2nd A* tending to be angulated and weakly spurred near tip.

Abdomen brownish black, the outer segments, including the genital shield, a little brighter. Ovipositor with the cerci elongate, dusky on proximal half, the distal portion yellow, upcurved.

Holotype, ♀, Prata, Par , Brazil, June 30, 1919 (H. S. Parish); previously recorded (Proc. Acad. Nat. Sci. Philadelphia 1921: 62; 1921) as *decisa*. Paratype, 1 alcoholic female, Wilhelmina Gebirgte, Dutch Guiana, l n II, km. 5.7, along creek, September 15, 1943 (Geijskes).

Ctenolimnophila (*Ctenolimnophila*) *fuscoanalis* is allied to *C. (C.) decisa* (Alexander) yet is quite distinct in the venation and pattern of the wings, as described. The shortness of the tarsi is to be emphasized.

Genus *Sigmatomera* Osten Sacken

***Sigmatomera* (*Sigmatomera*) *geijskesana* new species.**

Allied to *apicalis*; general coloration of thorax fulvous-yellow; antennæ black, the more proximal flagellar segments with the tips light yellow; femora yellow, each with two broad brownish black rings, one before mid-length, the second being the slightly narrower apex; tibiæ obscure yellow, the tips darkened, tarsi brownish black; wings light yellow, with three

entire dark crossbands, the apical one paler; band at and beyond arculus more intense in cells *C* to *M* inclusive; band at cord very irregular in outline due to the short spurs along the various veins entering the cord.

FEMALE.—Length about 17 mm.; wing 13 mm.

Rostrum and palpi obscure yellow, the terminal segment of the latter a trifle darker and more slender. Antennæ black, the extreme apex of the flagellar segments light yellow to produce a very weak bicolored effect; the pale color decreases on the outer segments, becoming obsolete on about the seventh to eighth flagellar segment; segments moderately incised on lower face, the upper face nearly straight to very insensibly emarginate, the sigmoid effect thus being very slight. Head obscure yellow.

Prothorax and mesothorax almost uniformly fulvous yellow, the surface nitidous; præscutum with the three fulvous stripes narrowly separated by yellow interspaces; scutal lobes similarly fulvous. Halteres yellow. Legs with the coxæ and trochanters fulvous yellow; femora yellow, each with two broad conspicuous brownish black rings, the outer one being the broad apex; second dark ring about one-third wider, before midlength of the segment; tibiæ obscure yellow, the tips darkened; tarsi brownish black. Wings light yellow, handsomely patterned with brown, appearing chiefly as three dark crossbands; basal band at and beyond the level of arculus, completely crossing the wing, darkest in cells *C* to *M*, inclusive, much paler but wider in the anal cells; second band at cord, completely traversing the wing, its outline very irregular because of short seams along all of the veins constituting the cord; third band apical, paler brown, connected with the second area by seams in the costal portion and in the anal field, isolating a large yellow ground area beyond the cord; veins light yellow in the ground areas, slightly darker in the patterned fields. Venation: Sc_1 ending beyond midlength of R_{2+3+4} , the latter simple on one wing of type, angulated and spurred at near one-third the length on the opposite wing, Sc_2 exactly opposite the spur; basal section of R_5 longer than $r-m$; $m-cu$ at or immediately beyond the fork of *M*.

Basal four abdominal tergites clear light yellow, the succeeding four tergites light chocolate-brown; sternites similarly colored but the dark ground of the outer segments more or less interrupted by a yellowish central stripe. Genital shield blackened, yellow at tip; cerci chestnut brown, the dorsal margin blackened; apex of cercus conspicuously trifid.

Holotype, ♀, Paramaribo, Dutch Guiana, August 30, 1940, at light (Geijskes).

I take great pleasure in naming this interesting crane-fly for the collector, Dr. D. C. Geijskes, to whom we owe most of our recent knowledge of the insect fauna of Surinam and to whom I am personally indebted for the presentation of numerous interesting Tipulidæ. The species is most similar to *Sigmatomera*

(*Sigmatomera*) *apicalis* Alexander, still known only from British Guiana, the two species differing conspicuously in the pattern of the legs and wings. In *apicalis*, there are no basal black rings on the femora while the wing pattern is quite distinct, the basal dark area not reaching the costa, the band at the cord narrow and regular in outline and the darkened apex not connected with the central area along the posterior margin.

Osten Sacken considered that the genus *Furina* Jaennicke was a synonym of *Gnophomyia* Osten Sacken. However, there can be no question but that this group actually falls within the present complex and would be the oldest name except for the fact that *Furina* Jaennicke is preoccupied by the same name *Furina* Dumeril. I herewith propose the name *Eufurina* to replace *Furina* Jaennicke. There are three subgeneric groups in *Sigmatomera*, the synonymy being as follows:

1. *Sigmatomera* Osten Sacken, 1869.
2. *Austrolimnobia* Alexander, 1922 (syn. *Astelobia* Edwards, 1923).
3. *Eufurina* new name (syn. *Furina* Jaennicke, 1867; nec *Furina* Dumeril, 1853).