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NEW OR LITTLE-KNOWN TIPULIDÆ.

New or little-known Tipulidæ (Diptera).—LXXII. Neotropical Species. By CHARLES P. ALEXANDER, Ph.D., F.R.E.S., Massachusetts State College, Amherst, Massachusetts, U.S.A.

IN the present instalment I am discussing various species of crane-flies from Ecuador that were captured by Messrs. F. Martin Brown, David Laddey and William Clarke-Macintyre, who are largely responsible for our recent great increase in knowledge of many groups of insects in this republic. My deep thanks are extended to the collectors for the privilege of retaining in my collection the types of the novelties discussed. Paratypes of the species secured by Professor Brown have been deposited in the collection of the American Museum of Natural History, New York City.

Brachypremna ara junco, sp. n.

Size medium (wing, male, 18.5 mm.); mesonotal præscutum conspicuously patterned with brown, obscure

yellow and brownish black; mediotergite dark brown with a pair of yellowish spots on the posterior third; basal flagellar segments weakly bicoloured; palpi black, the apices of the segments yellow; thoracic pleura patterned with darker; legs brownish black, the tarsi paling to obscure yellow; wings strongly infuscated, patterned with darker brown and cream-coloured areas; darkenings of abdominal sternites very pale, broadly triangular in outline; male hypopygium with the caudal margin of the ninth tergite with a broad U-shaped notch, the adjoining angles of which are produced into relatively small lobes; lateral portions of tergite on either side with about a score of strong setæ; dististyle slightly widened outwardly, its tip obtuse.

Male.—Length about 14 mm.; wing 18.5 mm.

Frontal prolongation of head obscure brownish yellow above, infuscated on ventral half; nasus blackened; palpi conspicuously variegated, the segments black with yellow apices, that of the fourth unusually extensive and conspicuous. Antennæ with scape and pedicel yellow; proximal flagellar segments weakly bicoloured, most conspicuously so on the first segment where the basal half is infuscated, the apex yellow; succeeding segments with the darkened bases less conspicuous; outer five segments uniformly brownish black. Head brownish yellow, more or less yellow pollinose; posterior vertex on either side of mid-line more or less darkened.

Pronotum chiefly dark brown, narrowly lined longitudinally with yellowish stripes. Mesonotal præscutum conspicuously patterned, the ground-colour behind obscure yellow pollinose, in front, particularly in the humeral region, strongly infuscated; disk of præscutum chiefly occupied by four brown stripes that are vaguely margined by still darker brown, the cephalic ends of the intermediate stripes brightening to obscure orange; lateral præscutal stripes broadly triangular, very wide at the suture, separated from the humeral darkening by an oblique yellowish line; scutal lobes chiefly infuscated, the median region narrowly and indistinctly paler; scutellum infuscated, a very little paler on sides, parascutella dark; mediotergite almost uniformly dark brown on its proximal two-thirds, the posterior portion with an obscure yellow oval spot on either side of the mid-line; pleurotergite

chiefly testaceous yellow, the posterior dorsal portion a little darker. Pleura with the ground-colour testaceous yellow, the propleura and mesepisternum extensively and conspicuously variegated with brown; dorsopleural membrane infuscated. Halteres brownish black, the base of the stem yellow, the knob slightly darker. Legs with coxæ obscure yellow, more or less extensively infuscated on outer faces; trochanters yellow; femora brownish black, the bases narrowly obscure yellow; tibiæ black; tarsi brownish black, the outer segments paling to obscure yellow. Wings with the ground-colour strongly infuscated, the prearcular and costal fields more intensely so; stigma oval, darker brown, slightly more blackened around the margins; wing tip and margin narrowly bordered by darker brown; restricted but conspicuous yellow spots, most evident in cells R_5 and M_1 ; veins beyond cord narrowly bordered by brown, vein Cu less evidently so; veins beyond cord brownish black, in the costal and prearcular fields more reddish brown. Venation: R_s square at origin; $r-m$ obliterated by the short fusion of R_{4+5} and M_{1+2} ; m a trifle longer than the petiole of cell M_1 .

Basal abdominal tergites dark brown, patterned with obscure yellow on margins; outer tergites more or less variegated with yellow on their basal rings; subterminal segment dark brown; sternites chiefly obscure yellow, each with a broad-triangular pale brown mark that does not reach the margins. Male hypopygium with the tergite of distinctive conformation, transverse, narrowed outwardly, the caudal margin with a broad and relatively deep U-shaped notch, the lateral borders of which are produced into relatively small, abundantly setuliferous lobes; outer portions of tergite with about a score of long powerful setæ, the extensive median area with abundant setulæ. Dististyle with the spine of outer face placed at near two-fifths the length of style, strong and powerful, short, acute at tip; apex of style flattened, slightly widened outwardly, gently curved, its tip obtuse; outer margin before apex with a few relatively short setæ.

Hab. Ecuador (Napo-Pastaza).

Holotype, ♂, headwaters of the Rio Arajuno, Napo Watershed, altitude 1000 metres, April 24, 1941 (*Macintyre*).

From all other species of the genus having blackened femora and tibiæ, including *Brachypremna nigrofemorata* Alexander and *B. uniformis* Alexander, the present fly is readily told by the larger size, distinctive coloration of the body and wings, and by the pattern of the antennæ and palpi.

Brachypremna karma, sp. n.

Size above medium (wing, male, 22 mm.); head and thoracic notum uniformly dark brown, unpatterned, the thoracic pleura and pleurotergite yellow, unmarked; femora and tibiæ black, the genua broadly whitened; distal fourth of tibiæ white, tarsi white; wings with a strong brownish tinge, restrictedly patterned with darker brown; conspicuous yellowish spots before and beyond stigma, in outer medial field and at outer end of cell *M*; *Rs* square and more or less angulated at origin; abdominal tergites brown, the basal rings more yellowed; sternites uniformly yellow, without darkening; male hypopygium with the tergite transverse, its caudal margin almost truncate; dististyle uniformly pale, the tip strongly decurved, the outer margin with about eight strong setæ.

Male.—Length about 20 mm.; wing 22 mm.

Frontal prolongation of head testaceous yellow, including the long conspicuous nasus, the ventral half a trifle darker; palpi black, the incisures of the more proximal segments narrowly whitened, the terminal segment uniformly black. Antennæ with scape testaceous yellow, pedicel clearer yellow; flagellum broken. Head above brown, sparsely pollinose but virtually unpatterned, beneath clearer yellow.

Pronotum brown. Mesonotum uniformly dark brown, without pattern, the parascutella, lateral portions of mediotergite, and the pleurotergite more yellowed. Pleura uniformly yellow, unpatterned, the dorsopleural region more infuscated. Halteres with stem yellow, knob more infuscated, its apex paler. Legs with the coxæ and trochanters yellow; femora with bases rather narrowly yellowed, passing into black, the tips rather broadly (on fore leg about one-eleventh) and abruptly white; tibiæ black, the bases abruptly white, the amount a little less than the femoral tips; tips of tibiæ (about the distal fourth) whitened; tarsi white. Of three legs preserved

two are detached, but all of these are similar in colour; it is possible that the posterior legs are differently coloured. Wings with a strong brownish tinge, the prearcular and costal fields somewhat richer brown; stigma oval, yellowish brown, ringed with darker brown; veins beyond cord more or less seamed with slightly darker brown, more intense at wing-tip; conspicuous yellowish spots as follows: Before and beyond stigma; outer end of cell R_5 ; centres of cells M_1 , 1st M_2 and 2nd M_2 ; outer end of cell M and the base of M_4 , forming conspicuous paired areas on either side of $m-cu$; cell Cu somewhat paler than the remainder of ground, particularly on its basal half; veins brown. Venation: R_s square and more or less angulated at origin.

Abdomen with tergites brown, restrictedly more yellowish on sides at base or over the basal rings; sternites uniformly yellow; eighth tergite somewhat more darkened on its proximal half; hypopygium yellow, the tergal lobes infuscated. Male hypopygium with the tergite transverse, its caudal margin very shallowly emarginate to subtruncate, the lobes correspondingly low. Basistyles relatively stout. Dististyle uniformly pale; outer spinous lobe at near one-third the length of style, long and erect. Spex of style strongly decurved into a flattened blade, the outer margin before apex with about eight long strong setæ; apex of blade with scattered peg-like spines scattered over the surface.

Hab. Ecuador (Napo-Pastaza).

Holotype, ♂, headwaters of the Rio Arajuno, Napo Watershed, altitude 1000 metres, April 29, 1941 (*Macintyre*).

Brachyremna karma is very different from all other species so far made known, particularly in the unvariegated thorax and abdomen and in the rather conspicuous pattern of the wings, especially the yellow areas on the otherwise infuscated ground. By existing keys the fly runs to *B. candida* Alexander but is entirely distinct.

Tipula (Eumicrotipula) chicana, sp. n.

Belongs to the *glaphyoptera* group; size small (wing 12 mm. or less); general coloration buffy grey, the præscutum and scutum heavily patterned with dark brown or black; antennæ black, the pedicel obscure yellow; legs uniformly blackened; wings cream-yellow, very heavily

patterned with brown, restricting the ground-colour to large spots in most of the cells; R_{1+2} entirely atrophied; abdomen black, more or less pruinose, especially the basal tergite and the posterior borders of the succeeding segments; male hypopygium with the ventrocaudal lobe of basistyle short-oval; outer dististyle small, cylindrical; gonapophyses lobed at apex; eighth sternite unarmed.

Male.—Length about 8.5–9 mm.; wing 11.5–12 mm.; antenna about 3.8–4 mm.

Female.—Length about 9 mm.; wing 11 mm.

Frontal prolongation of head black, sparsely pruinose; nasus long and conspicuous; palpi black. Antennæ of moderate length, black, the pedicel obscure yellow; flagellar segments only moderately incised; verticils shorter than the segments. Head infuscated, the front and orbits somewhat paler, more buffy grey; summit of vertical tubercle with a small, more blackened spot.

Pronotum black, sparsely pruinose. Mesonotal præscutum with the ground-colour yellow or greyish yellow, heavily striped with dark brown; median stripe very broad, its lateral borders and a central vitta more intensely black; all præscutal stripes reaching the suture behind; scutal lobes extensively dark brown, the median area a little paler, the sides greyish yellow; scutellum grey pruinose, parascutella blackened; postnotum pruinose, the central portion of mediotergite darkened. Pleura light grey, heavily patterned with dark brown on the anepisternum, ventral sternopleurite, meron and lower pleurotergite. Halteres with stem yellow, knob darkened. Legs with coxæ grey pruinose; trochanters dark brown; remainder of legs uniformly black, without femoral brightening. Wings with the ground-colour cream-yellow, very heavily patterned with brown, restricting the ground to large spots in most of the cells, all the dark areas interconnected across the wing and along the veins: veins brownish black. Venation: R_s nearly twice $m-cu$; R_{1+2} entirely atrophied; petiole of cell M_1 subequal to or longer than m .

Abdomen black, more or less pruinose, especially the basal tergite and the posterior borders of the succeeding segments; sternites and hypopygium blackened, the surface weakly pruinose. Male hypopygium with the caudal border of tergite almost straight, with a very small

U-shaped median notch, the sides of which are very slightly produced. Basistyle with the ventro-caudal lobe short-oval, with conspicuous setiferous tubercles. Outer dististyle small, cylindrical, only a little over one-third the length of the inner style. Gonapophyses toothed or lobed at apex. Eighth sternite with the caudal margin evenly and convexly rounded, entirely unarmed, the discal setæ very sparse and scattered.

Hab. Ecaudor (Tungurahua).

Holotype, ♂, Tungurahua, Minza Chica, altitude 3500 metres, April 4, 1939 (*Brown*). *Allotype*, ♀, pinned with type. *Paratopotypes*, 6 ♂ ♀, April 4–13, 1939 (*Brown*).

Tipula (*Eumicrotipula*) *chicana* is readily told from other regional species of the *glaphyoptera* group that have the wings heavily patterned and vein R_{1+2} atrophied by the small size and uniformly blackened legs. The structure of the male hypopygium is likewise distinctive, particularly the tergite, gonapophyses and the unarmed eighth sternite. The most similar of these other species are *T* (*E.*) *consonata* Alexander, *T.* (*E.*) *fraudulenta* Alexander, and *T.* (*E.*) *obirata* Alexander.

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

Belongs to the *glaphyoptera* group; mesonotum obscure brownish yellow, patterned with brownish black to black, including three black præscutal stripes; antennæ relatively short, scape and pedicel yellow, flagellum abruptly black; flagellar segments scarcely incised; knobs of halteres brownish black; wings infuscated, the costal region with four extensive but ill-delimited darker brown clouds, the interspaces obscure yellow; R_{1+2} atrophied; first abdominal tergite yellow, succeeding tergites brown; basal sternites yellow, the outer segments infuscated; male hypopygium with the caudal margin of tergite gently emarginate, with a rounded median notch; outer dististyle cylindrical; eighth sternite unarmed.

Male.—Length about 11 mm. wing 13 mm. antenna about 2.8 mm.

Frontal prolongation of head relatively short, yellow; nasus short and stout, tufted with long black setæ; palpi black. Antennæ relatively short; scape and pedicel yellow, flagellum abruptly black; flagellar segments nearly cylindrical, the basal enlargement not or scarcely

indicated; verticils unusually short, less than the segments; segments clothed with a very short dense white pubescence; antennæ 12-segmented, the usual reduced terminal segment fused with the penultimate. Head obscure buffy yellow in front, more brownish grey behind; anterior vertex approximately three times as wide as the diameter of scape.

Mesonotal præscutum obscure brownish yellow, with three brownish black stripes, entire and well-separated by the ground interspaces, the median stripe weakly divided by a paler line, its posterior end more reddened; scutum brownish black; scutellum testaceous brown, the parascutella slightly darker; postnotum, including the pleurotergite, brownish black. Pleura chiefly obscure yellow, vaguely patterned by pale brown, especially on the metapleura and meron. Halteres relatively long, stem yellow, darkened outwardly, the knob brownish black. Legs with the coxæ and trochanters obscure yellow; remainder of legs broken. Wings with the ground-colour strongly infuscated, the costal border with four further darkened areas that are relatively ill-delimited, merging behind with the ground and likewise with the more obscure yellow interspaces; the darkened costal areas extend more or less distinctly across the basal cells to vein *Cu*, the postarcular darkening being particularly evident; a more or less distinct suffusion along the cord; cells *R*, *M*, outer radial cells and bases of anal cells vaguely brightened; veins dark brown. Venation R_{1+2} atrophied; *Rs* about twice *m-cu*; petiole of cell M_1 a little exceeding *m*.

First abdominal tergite light yellow, contrasting with the black postnotum; succeeding tergites brown, their caudal borders somewhat paler, the lateral borders of the basal two tergites narrowly but conspicuously black; basal sternites yellow, the outer segments infuscated. Male hypopygium with the caudal margin of the tergite gently emarginate, with a further rounded U-shaped median notch, the adjacent angles produced into short acute points. Basistyle unarmed. Outer dististyle cylindrical, dark-coloured, provided with long coarse setæ. Inner dististyle longer than the outer, more or less leg-shaped, the "foot" compressed, obtuse at its tip. Eighth sternite unarmed.

Hab. Ecuador (Tungurahua).

Holotype, ♂, Rio Blanco, Pastaza, altitude 2000 metres, May 1940 (*Macintyre*).

Tipula (Eumicrotipula) efficax is entirely distinct from the other regional members of the group having patterned wings and veins R_{1+2} atrophied. The relatively heavy yet diffuse costal pattern, in conjunction with the short simple antennæ and the structure of the male hypopygium, readily serve to separate the fly from other generally similar species, as *T. (E.) chicana*, sp. n., *T. (E.) fraudulenta* Alexander, and others.

Tipula (Eumicrotipula) phalangioides, sp. n.

Almost apterous in both sexes; general coloration brown and yellow, with pruinose areas; antennæ short, flagellar segments cylindrical or virtually so, with sparse appressed verticils on the outer segments; legs long, brown, femora with a vague, obscure yellow, subterminal ring; abdominal tergites buffy to orange, broadly blackened medially.

Male.—Length about 9–10 mm.; wing 0.6–0.7 mm.; antenna about 2.3–2.4 mm.

Female.—Length about 11–12 mm.; wing 0.6–0.7 mm.

Frontal prolongation of head brown; nasus distinct; palpi black. Antennæ short, only a little longer than the palpi; scape and pedicel yellow, flagellum black; antennæ 11- or 12-segmented; flagellar segments short-cylindrical, the intermediate segments transversely furrowed and wrinkled; a very short dense black pubescence; outer segments with sparse appressed verticils. Head reddish brown, variegated with darker brown on anterior vertex and as a more or less distinct median line; sides of anterior vertex and the occipital region more pruinose; vertical tubercle low and inconspicuous, entire.

Pronotum reddish brown. Mesonotal præscutum reddish brown, variegated by dark brown or brownish black on sides, the præscutum more or less light grey pruinose; posterior sclerites of notum orange-yellow to obscure yellow medially, the surface more or less pruinose, the sclerites darker laterally; scutum and scutellum somewhat darkened medially, the postnotum clear yellow. Pleura dark brown. Both pleura and tergum greatly modified by the nearly apterous condition, the præscutum being almost flat; scutellum not projecting; pleura very

narrow and reduced, the coxæ correspondingly lengthened. Halteres brown, of moderate length but twisted, the knobs very long in comparison with the length of the stems. Legs with coxæ dark brown basally, paling to obscure yellow on outer half; trochanters brown; femora brown, the tips more brownish black, preceded by a vague, obscure yellow, subterminal ring; remainder of legs dark brown, the tibiæ and basitarsi a trifle paler; legs long and slender in relation to the body; claws simple, long and almost straight. Wings reduced to tiny pads in both sexes, approximately one-half the length of the halteres; basal half somewhat paler than the distal portion; no distinct venation other than a greatly thickened costa.

Basal abdominal tergites pale buffy to orange, conspicuously patterned with black, including broad lateral borders and lateral triangles and short median lines that are broken at the posterior borders of the segments; surface more or less grey pruinose, especially near posterior portions of segments; setigerous punctures of the pale ground sparse but conspicuous, black; sternites more orange, the caudal margins darker brown; outer segments, including hypopygium, brownish black. In the female the tergites are more broadly blackened laterally, leaving a broad pale median stripe. Ovipositor with valves long and slender, especially the needle-like cerci. Male hypopygium of moderate size. Ninth tergite with its caudal margin generally convex but produced into two short submedian lobes that are separated by a U-shaped notch. Outer dististyle a spatulate blade. Inner dististyle elongate, blackened, bifid near apex. Eighth sternite unarmed.

Hab. Ecuador (Tungurahua).

Holotype, ♂, Minza Chica, Mount Tungurahua, altitude 3900 metres, April 11, 1939 (*Brown*). *Allotopotype*, ♀, pinned with type. *Paratopotypes*, 40 ♂♀, altitude 3900–4650 metres (12,675–15,112 feet), April 10–11, 1939 (*Brown*).

This is one of the most interesting crane-flies secured by Professor and Mrs. Brown in Ecuador. It is readily told from all other described species of the subgenus by the diagnostic features listed above, particularly the greatly reduced wings of both sexes. The antennal verticils are so reduced that I had at first placed this fly in the genus

Holorusia Loew, but from the structure of the male hypopygium there can be no question of the correctness of the present assignment.

The following notes on the occurrence of this high-altitude species were supplied by Professor Brown. "These flies were taken between 4000 and 4650 metres on Minza Ridge (S.E.), Volcan Tungurahua, while running about over the ground. One female was ovipositing in wet moss. A copulating pair was preserved in alcohol. No sun during the day—hail, sleet and rain, plus mist, all of the time. The highest specimen was taken at the foot of the cliffs of the west crater, which was also the highest point at which we observed moss." "These specimens (27, chiefly males) are from the lower slopes of Minza Ridge just above and among the last of the heaths, the latter about six inches high. These specimens represent the lowest altitude at which the species was found." There is a brief further note by Professor Brown in an article by W. Robert Moore, "From sea to clouds in Ecuador," *Nat. Geog. Mag.*, 80 : 724 ; December 1941.

Limonia (*Neolimnobia*) *orthogonia*, sp. n.

Size small (wing, male, 5.5 mm.); general coloration yellow, the præscutum with a median dark stripe; scutum and scutellum with double dark stripes that enclose a pale central line; antennal flagellum brown; legs black, the femora with two yellow rings, the outermost apical; wings yellow, patterned with brown; *Rs* square and short-spurred at origin; a supernumerary cross-vein in cell R_3 just beyond the level of vein R_2 ; abdomen yellow, the posterior borders of the tergites narrowly dark brown; male hypopygium with the rostral prolongation of the ventral dististyle long and slender, with two relatively long curved spines arising from a common tubercle.

Male.—Length about 5 mm.; wing 5.5 mm.

Rostrum brownish black; palpi black. Antennæ with scape obscure yellow; pedicel brownish yellow flagellum brown; basal flagellar segments subglobular, the outer ones more elongate, especially the terminal segment which is one-third longer than the penultimate; verticils of the more basal flagellar segments very long, the longest ones more or less unilaterally distributed. Head light fulvous or brownish yellow, the anterior vertex more greyish, of

moderate width, approximately twice the diameter of the scape.

Pronotum dark brown above, yellow on sides. Mesonotum yellow, the præscutum with a relatively narrow but conspicuous dark brown median stripe, at the suture divided, including the mesal edges of the scutal lobes and lateral portions of the scutellum, converging behind, enclosing a pale central stripe on the two latter sclerites; central portion of mediotergite chiefly darkened, the lateral borders and all of the pleura and pleurotergite pale yellow. Halteres with stem obscure yellow, knob brownish black. Legs with the coxæ yellow; trochanters more greenish yellow; a single leg (hind) remains; femora black, the narrow apex and a wider subterminal ring yellow, enclosing a black annulus that is approximately twice as extensive as the yellow tip; femoral bases restrictedly obscure yellow; tibiæ and tarsi uniformly black. Wings with a strong yellow tinge, the prearcular and costal portions more saturated yellow; a conspicuous brown pattern that is restricted to the vicinity of the veins, including areas at arculus; origin of *Rs* and fork of *Sc*; R_2 and free tip of \bar{Sc}_2 ; cord and outer end of cell 1st M_2 , and over the supernumerary cross-vein in cell R_3 ; less distinct seams along the veins beyond cord, *Cu*, 1st *A* and 2nd *A*; outer end of cell Sc_2 more or less clouded with brown; veins dark brown, greenish yellow in the costal field. Venation *Sc* short, Sc_1 ending about opposite the origin of *Rs*, Sc_2 at its tip; *Rs* square and short-spurred at origin; a supernumerary cross-vein in cell R_2 , just beyond level of R_2 ; *m-cu* at or shortly before fork of *M*. In the unique type, a further adventitious cross-vein in cell R_3 , lying at about two-thirds the length of the cell.

Abdomen yellow, the posterior borders of tergites narrowly dark brown, becoming less distinct to sub-obsolete on the eighth and ninth segments; hypopygium yellow. Male hypopygium with the caudal border of tergite strongly convex. Basistyle with ventral-mesal lobe obtuse; face of style just cephalad of lobe with a few stronger blackened bristles, those of the lobe long and delicate. Dorsal dististyle straight on basal half or more, thence curved, the tip acute. Ventral dististyle relatively large and fleshy, its area a little greater than that of basistyle; rostral prolongation long and slender, with two

curved spines from a common tubercle ; spines relatively long, exceeding in length the slender apex of the prolongation beyond them. Gonapophyses with mesal-apical lobe long and only gently curved.

Hab. Ecuador (Napo-Pastaza).

Holotype, ♂, Abitugua, altitude 1100 metres, March 21, 1940 (*Macintyre*).

The present fly differs conspicuously from the two other small species having a supernumerary cross-vein in cell R_3 that have been tentatively assigned to this subgenus. It differs from *Limonia* (*Neolimnobia*) *interstitialis* Alexander in the small size and patterned legs, and from *L.* (*N.*) *paprzyckii* Alexander in the venation and in the structure of the male hypopygium. It should be noted that these various species are evidently allied to other species in the Neotropical fauna that lack the supernumerary cross-vein in cell R_3 and are therefore placed in the typical subgenus *Limonia*, such flies including *L.* (*L.*) *contradistincta* Alexander, *L.* (*L.*) *melaxantha* Alexander, *L.* (*L.*) *meridensis* Alexander and *L.* (*L.*) *repanda* Alexander.

Limonia (*Peripheroptera*) *peramæna*, sp. n.

General coloration black, the mesonotum variegated with yellow pollen, including the præscutal interspaces ; antennæ black throughout ; thoracic pleura heavily grey pruinose, variegated by more blackened areas ; legs black, the femoral bases restrictedly obscure yellow ; wings yellow, conspicuously patterned with brown, this including the wing-tip, a broad seam at cord, and less evident areas elsewhere ; abdomen black, the caudal borders of the segments vaguely paler.

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

Rostrum and palpi black. Antennæ black throughout ; flagellar segments oval, the more basal segments shorter. Head black.

Pronotum black. Mesonotal præscutum with the restricted ground obscure brownish yellow pollinose, almost obliterated by the three extensive polished black stripes, the humeral and sublateral portions of the sclerite somewhat more conspicuously brownish yellow pollinose, the lateral border blackened ; scutum black ; posterior sclerites of notum black with a sparse golden-yellow pollen on the central portions. Pleura heavily clear grey

pruinose, variegated by more blackish areas on the ventral anepisternum and the ventral sternopleurite. Halteres black, the extreme base of stem paler. Legs black, with only the narrow femoral bases obscure yellow. Wings with the ground-colour yellow, patterned with brown as follows a conspicuous band across cord, extending from the stigma to the caudal border opposite vein *Cu*; outer end of cell 1st *M*₂; a restricted postarcular darkening in the bases of cells *R* and *M*; a conspicuous cloud at *Sc*₂; wing-tip broadly infuscated, somewhat more intensely so in cell *R*₃; less evident brown washes along the posterior border of wing, including much of cell 2nd *A*, veins brown, those in the prearcular field more brownish yellow. Venation: *Sc*₁ ending opposite origin of *Rs*, *Sc*₂ far from its tip; *Rs* very gently arcuated, a little longer than the basal section of *R*₄₊₅; free tip of *Sc*₂ and *R*₂ virtually in transverse alignment, with *R*₁₊₂ jutting beyond as a short spur; cell 1st *M*₂ elongate, nearly equal to vein *M*₁₊₂ beyond it; *m-cu* about one-fourth its length beyond fork of *M*; cell 2nd *A* moderately broad, widest about opposite two-thirds the length.

Abdomen black, the caudal margins of the tergites very narrowly and insensibly paler brown; genital shield black; valves of ovipositor reddish horn-colour, the bases of the cerci blackened.

Hab. Ecuador (Tungurahua).

Holotype, ♂, Minza Chica, Mount Tungurahua, altitude 3200 metres April 8, 1939 (*Brown*).

Closest to *Limonia* (*Peripheroptera*) *angustifasciata* (Alexander), of Venezuela, differing in the details of coloration, especially of the thoracic notum, pleura and abdomen.

Limonia (*Geranomylia*) *beatrice*, sp. n.

Allied to *glauca*; mesonotal præscutum with the central dark stripe relatively narrow; anterior vertex (male) unusually narrow, the eyes correspondingly large; pleura and pleurotergite uniformly pale yellow; knobs of halteres blackened; femora chiefly blackened, the outer third or fourth yellow, enclosing a conspicuous black ring; wings pale yellow with a showy brown pattern that is chiefly marginal in distribution; third costal area involving both the fork of *Sc* and the origin of *Rs*; *Sc*₁ ending about

opposite two-fifths the length of *Rs*; abdomen brownish yellow; male hypopygium with the rostral prolongation of the ventral dististyle relatively stout; gonapophyses with mesal-apical lobe darkened, appearing more or less shell-like in outline, terminating in a small apiculate point; anal tube very low and broad, with a few strong setæ.

Male.—Length, excluding rostrum, about 7.5 mm.; wing 7.4 mm.; rostrum about 3.5 mm.

Rostrum, including maxillary palpi, black. Antennæ black throughout; flagellar segments long-oval, with relatively short verticils; terminal segment about one-third longer than the penultimate. Head with eyes large, the anterior vertex reduced to a mere strip that is about as wide as a single row of ommatidia; grey, on posterior vertex becoming wider and bordered on either side by blackish areas.

Pronotum narrowly darkened medially, paler on sides. Mesonotal præscutum yellow, with three cinnamon-brown stripes; the central one darker medially, paling on the edges; this stripe is narrower than in *glauca* but wider than in *anthina*, not bordered laterally by a silvery line, as in *glauca*; lateral præscutal borders not or scarcely darkened; scutal lobes with conspicuous dark brown areas, the central portion yellow; scutellum grey basally, bordered on either side and behind by blackish, parascutella yellow; mediotergite blackened medially, the lateral borders broadly yellow; pleurotergite uniformly pale yellow. Pleura, including the dorsopleural membrane, yellow. Halteres relatively short, stem yellow, more obscure outwardly, the large knob blackened. Legs with coxæ and trochanters greenish yellow; femora yellow on about the basal third or fourth, thence passing into dark brown or brownish black, the distal third or fourth yellow, enclosing a clearly defined black ring that is about equal in extent to either subtending pale band; tibiæ brown, paler basally; tarsi somewhat paler than tibiæ, the outer segments brownish black. Wings pale yellow, with a conspicuous and handsome brown pattern that is chiefly marginal in distribution, including four costal areas, the third extensive and irregular, involving both the fork of *Rs* and the origin of *Rs*; fourth area stigmal, confluent with a

conspicuous seam across cord, broken just before $r-m$; outer end of cell 1st M_2 seamed with brown; conspicuous marginal brown seams, smallest on M_{1+2} ; areas on veins R_3 and R_{4+5} extending back along the veins and becoming confluent near outer end of cell R_3 ; seam on vein M_3 involving the entire vein; seams on anal veins of moderate size but well defined; a distinct seam at near mid-length of vein Cu in cell M veins yellow, brown in the clouded areas. Venation Sc relatively long, Sc_1 ending about opposite two fifths the length of Rs , Sc_2 at its tip; Rs angulated to virtually square at origin; cell 1st M_2 long, subequal to the distal section of vein M_{1+2} ; $m-cu$ a short distance beyond fork of M , shorter than the distal section of Cu_1 ; vein 2nd A straight for most of its length, the cell relatively narrow.

Abdomen obscure brownish yellow; hypopygium clearer yellow. Male hypopygium with the ninth tergite transverse, narrowed outwardly, the caudal margin very shallowly emarginate, with correspondingly low lobes that are provided with strong setæ. Basistyle small, its area only about one-fourth that of the ventral dististyle; ventromesal lobe simple. Dorsal dististyle a moderately curved rod, its tip acute. Ventral dististyle large and fleshy, the rostral prolongation small but stout, bearing two separate long spines from basal tubercles. End of anal tube very low and broad with few but very strong setæ. Gonapophyses with mesal-apical lobe darkened, appearing more or less shell like in outline, terminating in a small apiculate point. Ædeagus terminating in two divergent flaps.

Hab. Ecuador (Napo-Pastaza).

Holotype, ♂, Abitagua, altitude 1200 metres, August 15, 1937 (*Macintyre*).

Although related to *Limonia* (*Geranomyia*) *glauca* (Alexander), the present fly is quite distinct. In the former species, the central præscutal stripe is much broader, more fulvous, subtended on either side by a narrow silvery line, best indicated when viewed from above, while the lateral præscutal margins are darkened. The leg pattern and structure of the male hypopygium, particularly the rostral prolongation and gonapophyses, are distinct in the two flies.

Orimarga (Orimarga) trispinigera, sp. n.

Size relatively small (wing, male, under 5 mm.); general coloration black, the lateral margin of præscutum and a longitudinal stripe on the thoracic pleura more pruinose; halteres uniformly blackened; wings moderately tinged with blackish, the prearcular field more whitened; *Sc* short, *Sc*₂ nearly opposite the origin of *Rs*; basal section of *R*₄₊₅ strongly angulated; male hypopygium with the dististyles fused basally, the outer one a flattened black blade, its tip suddenly narrowed into a gently curved black spine; inner style a little longer, the slender distal portion at apex with three strong black spines.

Male.—Length about 5.5 mm.; wing 4.8 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments oval, the two outer segments subequal. Head black.

Pronotum dull black. Mesonotum dull black, the surface sparsely pruinose, the lateral præscutal border narrowly light grey. Pleura dull black with a relatively indistinct and poorly delimited grey stripe across the dorsal sternopleurite and meral region. Halteres relatively long, uniformly blackened. Legs with the fore coxæ blackened, the remaining coxæ and all trochanters more brownish yellow remainder of legs broken. Wings moderately tinged with blackish, the prearcular field more whitened; veins dark brown. Macrotrichia on veins beyond cord with the exception of *Cu*. Venation: *Sc* short, *Sc*₁ ending about opposite one-fifth the length of *Rs*, *Sc*₂ opposite the origin of the latter; *Rs* angulated and short-spurred at origin; free tip of *Sc*₂ far before *R*₂, *R*₁ alone subequal to *R*₁₊₂; *R*₂₊₃ about one-half longer than *R*₂; basal section of *R*₄₊₅ strongly angulated; cell *M*₂ narrowed; cell *M*₃ longer than its petiole; *m-cu* about opposite one-third the length of *Rs*; cell 2nd *A* narrowed on its distal portion.

Abdominal tergites black, the sternites a little paler; hypopygium black. Male hypopygium with a low swelling on mesal face of basistyle near its proximal end, this provided with numerous long erect setæ. Both dististyles of unusual and distinctive conformation, united at their bases; outer style shorter, appearing as a relatively flattened blade, its tip suddenly narrowed into a gently curved black spine; inner style longer, its basal half

stout, provided with numerous setæ, about six or seven near base long and very slender, the outer ones shorter and stouter; at near mid-length of free portion of style it becomes more narrowed, on outer margin at and back from apex with three black spinous setæ; lower margin of style with a scattered row of strong setæ, those near apex somewhat shorter.

Hab. Ecuador (Santiago-Zamora).

Holotype, ♂, Zamora, altitude 1000 metres, October 15, 1941 (*Laddey*).

Although the wings of the present fly are much less darkened, it seems to be most nearly allied to various black-winged species of the subgenus, including *Orimarga* (*Orimarga*) *funerula* Alexander, *O. (O.) saturniina* Alexander, and *O. (O.) scabriseta* Alexander. It is readily told from all approximately similar forms by the very different conformation of the dististyles of the male hypopygium, particularly the trispinous inner dististyle.

Polymera (Polymerodes) minutissima, sp. n.

Size very small (wing, male, 2.6 mm.); mesonotum dark brown, the pleura somewhat paler, with a brownish black dorsal longitudinal stripe; antennæ (male) elongate, exceeding the wing in length, uniformly blackened; flagellar segments weakly binodose; legs black; wings with an almost uniform brown suffusion; *Sc* unusually short, *Sc*₁ ending opposite mid-length of *Rs*, *Sc*₂ at its tip; *m-cu* before fork of *M*.

Male.—Length about 2.3 mm.; wing 2.6 mm.; antennæ about 3 mm.

Rostrum and palpi brown. Antennæ (male) elongate, exceeding in length the body or wing, black throughout; flagellar segments rather weakly binodose, the nodes with very long, outspreading verticils that are considerably longer than the segments. Head brown.

Mesonotum dark brown. Pleura brown, with a more brownish black dorsal longitudinal stripe. Halteres dusky. Legs with the coxæ and trochanters brownish testaceous; remainder of legs black (terminal tarsal segments of all legs broken). Wings with an almost uniform brownish suffusion, the costal border a trifle darker; veins brown. Venation *Sc* unusually short, *Sc*₁ ending opposite mid-length of *Rs*, *Sc*₂ at its tip *Rs* long,

strongly arcuated at extreme origin; R_{2+3+4} about one-third to one-half longer than R_{1+2} ; cell M_3 relatively small, the enclosing veins divergent; $m-cu$ before fork of M .

Abdomen black, the hypopygium a very little brightened.

Hab. Ecuador (Napo-Pastaza).

Holotype, ♂, headwaters of the Rio Arajuno, Napo Watershed, altitude 1000 metres, April 23, 1941 (*Macintyre*).

The present fly is by far the smallest species so far discovered in the entire genus. By my key to the species of the subgenus *Polymerodes* Alexander (Can. Ent., 52: 143; 1920), it runs to *Polymera* (*Polymerodes*) *conjunctoides* Alexander, a larger and quite different fly.

Atarba (*Atarba*) *diacantha*, sp. n.

General coloration reddish yellow, the notum without pattern; antennæ (male) relatively long, about one-half the length of body; basal flagellar segments bicoloured, the proximal ends yellow, the outer portions black; each flagellar segment with a single, very powerful bristle, these unilaterally distributed; knobs of halteres darkened; legs yellow, the outer tarsal segments blackened; wings with a strong yellow tinge, stigma scarcely indicated; Sc_1 ending before origin of the very short R_s ; abdomen of male with tergites weakly bicoloured, segments seven and eight uniformly brownish black; male hypopygium with outer dististyle bearing about five or six appressed spines; appendage of ninth sternite produced into strong slender spines, one at each outer lateral angle of the plate, directed laterad.

Male.—Length about 6.5 mm.; wing 6.2 mm.; antennæ about 3.3 mm.

Rostrum obscure brownish yellow; basal segments of palpi obscure yellow, the outer two segments slightly darker. Antennæ relatively long, about one-half the length of body; scape and pedicel yellow; basal flagellar segments bicoloured, the proximal third or more yellow, the outer portion black; on the succeeding segments the amount of yellow lessens progressively, on the outer segments quite lacking; flagellar segments subcylindrical, clothed with an abundant erect pale pubescence from

conspicuous basal tubercles ; each segment with a single powerful bristle, on the more proximal segments these being placed beyond mid-length, on the outer segments placed on basal half, these strong setæ unilaterally distributed. Head buffy grey ; anterior vertex less than twice the diameter of the scape.

Pronotum and mesonotum reddish yellow, without markings ; præscutal interspaces with a single row of four or five strong black setæ. Pleura weakly more darkened. Halteres with stem whitened, knob infuscated. Legs with coxæ reddish yellow ; trochanters yellow ; remainder of legs yellow, the tips of femora not or scarcely darkened ; outer tarsal segments blackened. Wings with a strong yellow tinge, the prearcular and costal fields clearer yellow ; stigma scarcely indicated ; veins yellow, brighter in the more flavous portions. Venation : Sc_1 ending a short distance before origin of R_s , Sc_2 a short distance before its tip ; R_s very short, subequal to basal section of R_5 , weakly angulated ; $m-cu$ a short distance beyond fork of M .

Abdominal tergites very slightly bicoloured, the bases of the segments yellow, the broader outer portions weakly infuscated ; in male a brownish black subterminal ring, involving segments seven and eight ; hypopygium yellow. Male hypopygium with the outer dististyle shorter than the inner, its outer margin with five or six relatively inconspicuous and more or less appressed spines, additional to the short, curved apex ; style generally parallel-sided or even gently constricted at near mid-length. Inner dististyle a slender, gently curved, blackened rod. Appendage of ninth sternite quadrate, slightly longer than wide, each outer lateral angle produced directly laterad into a slender sclerotized spine, the tip acute ; surface of appendage with abundant setæ, those of the basal portion long and conspicuous, virtually as long as the appendage itself.

Hab. Ecuador (Napo-Pastaza).

Holotype, ♂, Abitagua, altitude 1100 metres, September 1, 1939 (*Macintyre*).

Atarba (Atarba) diacantha is entirely distinct from the other regional species, particularly as regards the structure of the male hypopygium, as the appendage of the ninth sternite. Many species of the genus have this plate moderately produced into spinous points but none has the modification so accentuated as in the present fly.

Atarba (Atarba) tetracantha, sp. n.

General coloration reddish yellow, unpatterned; antennæ (male) nearly as long as the body or wing; proximal flagellar segments black, with very narrow yellow bases and even narrower pale tips; wings brownish yellow, stigma oval, medium brown; Sc_1 ending about opposite the origin of Rs ; male hypopygium with the broad sternal plate produced into two very conspicuous horns that are directed laterad and caudad, each bearing a strong lateral spine on its outer margin; outer dististyle slender, with scattered black spines, including three on the ventral surface; gonapophyses terminating on a smooth-margined flattened blade, without denticles.

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

Rostrum yellow; palpi black. Antennæ (male) elongate, only a little shorter than the body or wing; scape and pedicel yellow; basal flagellar segments bicoloured, black, with the very narrow bases pale yellow, the pale colour most extensive on flagellar segments two and three where about one-eighth of the segment is brightened; in addition, the extreme apex of the adjoining segment is similarly pale; on and after the sixth flagellar segment the colour becomes uniformly black; flagellar segments very long-cylindrical; segments each with a single elongate seta before apex, these unilaterally arranged, each being about one-third as long as the segment; on the more proximal segments occur additional shorter black verticils; all segments with a further erect yellow vestiture, the longest being about one-half the longest verticils. Head pale brown, sparsely pruinose; eyes large, the anterior vertex a little less than twice the diameter of scape.

Pronotum pale brownish yellow. Mesonotum reddish yellow, unpatterned; scutellum more yellowish. Pleura brownish yellow. Halteres with stem yellow, knob infuscated. Legs with the coxæ and trochanters yellow; remainder of legs broken. Wings brownish yellow, the prearcular and costal fields clear yellow; stigma oval, medium brown; veins pale brown, those of the proximal half of wing clearer yellow. Venation: Sc_1 ending about opposite origin of Rs , Sc_2 a short distance from its tip; Rs pale, especially on proximal portion, about twice the basal section of R_5 ; cell 1st M_2 rectangular, m short; $m-cu$ about one-fourth its length beyond the fork of M .

Abdominal tergites brownish black, the incisures of the more proximal segments narrowly brightened; basal sternites yellow, more obscured on outer segments; segments seven and eight blackened to form a conspicuous subterminal ring; hypopygium yellow, the sternal plate more infuscated except medially. Male hypopygium with the broad sternal plate produced into two very conspicuous horns that diverge from one another at a strong angle, on outer margin of each with a smaller spine at near two-thirds the length; caudal margin of plate between the horns strongly emarginate, the central portion with pale membrane; dorsal portion of plate with scattered strong setæ, with smaller setæ and setulæ far out on to the horns. Outer dististyle relatively slender, entirely blackened, slightly constricted beyond base; tip short, decurved; outer margin before tip with four spines, the outermost tiny, lying far distad; lower surface of style with three elongate, erect, black spines, one subbasal in position. Inner dististyle slender, only gently curved, its tip obtuse. Gonapophyses appearing as flattened blades, the apex a smooth-margined narrow spatula with the tip obtuse. *Ædeagus* relatively small but stout at base.

Hab. Ecuador (Napo-Pastaza).

Holotype, ♂, Abitagua, altitude 1200 metres, May 25, 1939 (*Macintyre*).

Atarba (*Atarba*) *tetracantha* has the male hypopygium, especially the sternal plate, somewhat as in *A. (A.) macracantha* Alexander and *A. (A.) procericornis* Alexander, but in all regards it is a quite different species. These three flies have the sternal plate unusually powerful and with a striking development of the lateral horns.

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

Allied to *rubriceps*; general coloration orange or orange-yellow, including the head and thorax, the præscutum with a polished blackened oval area on either side; halteres blackened, the apex of knob obscure yellow; wings whitish hyaline, unpatterned except for the unusually narrow dark stigma; no darkening in vicinity of arculus; abdominal tergites black, the posterior borders broadly yellow; male hypopygium with the lobe of the basistyle long and conspicuous, terminating in a long black spine, the mesal margin with a few scattered acute spines and a

dense fringe of setæ; outer dististyle a long slender darkened rod.

Male.—Length about 7 mm.; wing 6 mm.

Rostrum yellowish brown, relatively long, approximately one-half as long as remainder of head; palpi black. Antennæ with scape and pedicel dark brown; flagellum dark brown, the segments oval. Head polished orange or orange-yellow.

Thorax orange, very restrictedly patterned with black, including a polished oval area on præscutum behind the pseudosutural foveæ and not quite reaching the lateral borders of the sclerite. Pleura reddish yellow. Halteres blackened, the extreme base of stem paler, the apex of knob obscure yellow. Legs with coxæ and trochanters reddish yellow remainder of legs broken. Wings whitish hyaline, without dark colour excepting the unusually narrow, dark brown stigma which appears as an elongate-triangular area at the free tip of Sc_2 and R_2 ; prearcular field entirely undarkened; veins dark brown, C , Sc , R and prearcular veins more yellowed. Venation Sc_1 ending just beyond one-fourth the length of Rs , Sc_2 some distance from its tip, just beyond the origin of Rs ; R_2 shortly beyond fork of Rs ; $m-cu$ about one-third to one-fourth its length before fork of M .

Abdominal tergites with the posterior borders broadly yellow, the bases polished black; sternites more uniformly yellow; hypopygium brownish yellow. Sternal pocket of male well-developed on both fifth and sixth segments. Male hypopygium with the lobe of basistyle long and conspicuous, blackened, terminating in a long straight black spine, the mesal margin with a few scattered appressed acute spines; along the mesal edge of lobe with a dense fringe of long setæ. Outer dististyle a long slender darkened rod, the tip broken in the unique type; the part remaining exceeds in length the lobe of the basistyle, its surface provided with numerous scattered setæ from raised tubercles. Inner dististyle terminating in a single strong blackened point. *Ædeagus* obtuse, badly folded in the type slide but evidently not as produced as in *rubriceps*, provided with about seven long strong setæ.

Hab. Ecuador (Napo-Pastaza).

Holotype, ♂, Abitagua, altitude 1100 metres, April 12, 1940 (*Macintyre*).

Teucholabis (Teucholabis) subrubriceps is closest to *T. (T.) rubriceps* Alexander, of south-eastern Brazil, differing in several features of coloration and in the structure of the male hypopygium. The wings are unusually clear, with the stigmal darkening greatly reduced in area, and with no darkening at arculus.

Teucholabis (Teucholabis) inepta bisetosa, subsp. n.

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

Very similar to the typical form (Peru: Huanuco), differing in slight details of the male hypopygium. Inner dististyle with its outer arm more powerful and widely separated from the inner arm, gradually narrowed to a blackened point, on the outer margin near base of the darkened portion with two strong setæ. In typical *inepta*, the outer arm is more delicate and bears a single seta, beyond which point the arm narrows more abruptly into the long apical spine. Both the typical form and the present race have the setæ of the expanded blade of the phallosome much more numerous than in *idiophallus*, there being very long pale setæ interspersed among the much more numerous shorter ones. In *idiophallus*, only setæ of an intermediate size are present and these are few and scattered.

Hab. Ecuador (Napo-Pataza).

Holotype, ♂, Rio Huagra yacu, altitude 900 metres, March 31, 1941 (*Maciniyre*).

The present fly was taken on the same day and at the same place as a paratype of *Teucholabis (Teucholabis) luteicolor* Alexander, which, while surprisingly similar in general appearance, has the male hypopygium of entirely different structure.

Neognophomyia cochlearis, sp. n.

General coloration of thorax orange-yellow, patterned with dark brown on pronotum and pleura; knobs of halteres infuscated; femora yellow, the tips very weakly infuscated; wings whitish subhyaline, patterned with brown, including a subbasal cloud before the level of origin of *Rs*; subterminal abdominal segments blackened; male hypopygium with the tergal spines strong and powerful, black, virtually glabrous; inner dististyle unusually large and scoop-shaped phallosome consisting of a median

depressed plate superimposed by a pair of shorter, narrower blades.

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

Rostrum yellow ; first segment of palpi light yellow, the outer segments more infuscated. Antennæ with scape yellow, pedicel and flagellum brown ; basal flagellar segments oval, the outer ones becoming more elongate, with long, conspicuous verticils. Head light yellow ; anterior vertex relatively narrow.

Pronotum pale yellow, slightly more infuscated on sides. Mesonotum orange-yellow, the scutal lobes weakly darkened ; scutellum slightly infuscated, mediotergite obscure yellow, more infuscated on either side, these areas more or less convergent behind to form a more or less distinct V-shaped marking ; pleurotergite chiefly infuscated. Pleura yellow, the propleura and pteropleurite very weakly darkened, the anepisternum heavily and conspicuously blackened. Halteres with stem yellow, knob infuscated. Legs with the coxæ and trochanters yellow ; femora yellow, the tips very weakly to scarcely darkened ; tibiæ and basitarsi uniformly yellow ; second tarsal segment yellow, its tip and the remainder of the tarsi brownish black. Wings whitish subhyaline, rather heavily and conspicuously patterned with brown, including a moderately wide band at cord and a much broader, more diffuse one nearer the wing base, the outer end of the latter about opposite origin of *Rs*, behind reaching vein 2nd *A* but not involving the cell ; seam at cord much more conspicuous over the anterior cord than over *m-cu*, somewhat interrupted at the fork of *M* ; outer end of cell 1st *M*₂ narrowly seamed with brown ; veins brownish yellow to yellow, much darker in the patterned areas, especially along the cord. Venation *Sc*₁ ending just beyond *R*₂ ; *R*₂₊₃₊₄ a little more than one-half *R*₃₊₄ ; vein *R*₃ oblique, about one-fifth as long as *R*₄, the latter ending close to the wing-tip ; *Rs* relatively long, about one-half longer than vein *R*₃ ; *m-cu* just before mid-length of cell 1st *M*₂.

Abdominal tergites broadly infuscated on sides, the median region paler basal sternites pale, on segments five to seven, inclusive, with both the tergites and sternites more heavily and uniformly infuscated, particularly the tergites ; eighth and ninth segments pale, the style again

more or less darkened. Male hypopygium with the tergal spines long and conspicuous, heavily blackened, on distal half narrowed to acute spinous points, spines glabrous, on distal half more or less twisted, the surface with a ridge or carina that is provided with a very few weak setulæ. Outer dististyle relatively long and slender, its base dilated, at near mid-length more constricted, the elongate outer portion gradually narrowed, bearing five strong setæ, the outermost terminal in position. Inner dististyle unusually large and scoop-shaped, particularly the widely expanded outer lobe, the apex of which is truncated or broadly obtuse, blackened, provided with a few powerful setæ; outer margin of the above with a further fringe of about nine strong black setæ, inner or upper lobe of style low and narrow, its apex blackened, the margin with about five powerful black setæ. Phallosome narrow, consisting of a median depressed plate, its tip obtuse and unmodified, superimposed by two shorter and narrower flattened blades, their tips similarly obtusely rounded.

Hab. Ecuador (Santiago-Zamora).

Holotype, ♂, Zumbi, Rio Zamora, altitude 700 metres, November 2, 1941 (*Laddey*).

The most similar species is *Neognophomyia consociata* Alexander, which has somewhat similar heavily blackened spines. This differs in all details of structure of the hypopygium, including the more strongly setulose and carinate tergal spines and the entirely different dististyles and phallosome.

Neognophomyia scapha, sp. n.

General coloration yellow, the thoracic pleura with a continuous dorsal brown stripe; legs yellow, the tips of the femora, tibiæ and basitarsi weakly darkened; wings pale yellow, with a relatively broad brown seam along cord; abdominal tergites brown, with a conspicuous central yellow stripe; male hypopygium with the phallosome terminating in two blackened reflexed plates, the cephalic ends of which are produced into strong spines.

Male.—Length about 5 mm.; wing 5.2 mm.

Rostrum obscure yellow; palpi light brown. Antennæ with scape and pedicel obscure yellow. flagellum brown;

flagellar segments long-oval to elongate, with conspicuous verticils. Head yellow.

Pronotum yellow, darkened laterally, the pretergites clearer yellow. Mesonotum extensively and chiefly medium brown, the humeral region of præscutum yellowed; no distinct præscutal stripes; scutal lobes a little darker. Pleura yellow, with a conspicuous dorsal brown stripe extending from the cervical region to the pleurotergite and postnotum, the former not more intense in colour, as is common in the genus. Halteres with stem yellow, knob infuscated. Legs with the coxæ and trochanters yellow; remainder of legs yellow, the tips of femora, tibiæ and basitarsi weakly and inconspicuously infuscated; remainder of tarsi dark brown. Wings pale yellow, with a relatively broad brown seam along cord, the outer end of cell 1st M_2 much more narrowly darkened; a vague darkening in proximal portions of cells R and M ; veins pale brown, darker coloured in the clouded portions. Venation R_2 at near mid-length of petiole of cell R_3 ; $m-cu$ at near mid-length of cell 1st M_2 , the latter narrow.

Abdomen with the central portion of basal and intermediate tergites yellow, the lateral borders broadly dark brown; outer segments more uniformly dark brown; sternites yellow. Male hypopygium having the outer dististyle with its basal portion slightly widened, thence narrowed to the slender tip that terminates in a single elongate seta, with other subapical bristles along the outer margin. Inner dististyle unusually stout, especially at mid-length, at base with a blackened tooth or flange. Phallosome before apex expanded into rounded lobes or shoulders, the actual apex on either side of ædeagus produced into a reflexed flattened plate that terminates in a long powerful spine, the outer margin back from this spine with a few denticles and strong setæ. Tergal spines appearing as strong, nearly straight, blackened blades, their tips acute.

Hab. Ecuador (Napo-Pataza).

Holotype, ♂, Abitagua, altitude 1200 metres, April 4, 1937 (*Macintyre*).

In the structure of the male hypopygium, especially the phallosome, the present fly is entirely different from all others of the now rather numerous species of the genus.

It is somewhat like species such as *Neognophomyia colombicola* Alexander and *N. consociata* Alexander, yet very different.

Erioptera (Erioptera) polytricha, sp. n.

Allied to *multiannulata*; male hypopygium with the outer dististyle slightly widened on more than its basal half, on its lower margin here produced into a flattened lobe that terminates in three or four spinous setæ; apex of style slightly dilated, produced into a single strong spine that is surrounded by a dense brush of setæ.

Male.—Length about 2.8–3 mm.; wing 3.3–3.5 mm.

Female.—Length about 3.5 mm.; wing 3.5 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments with very conspicuous verticils in both sexes. Head buffy white.

Pronotum chiefly dark brown, the lateral borders whitened. Mesonotum chiefly dark brown, without distinct pattern. Pleura brown, striped longitudinally with white or greyish white, including a narrow dorsal line from the cervical region to the wing root, and a broader, more ventral stripe from behind the fore coxæ, passing beneath the halteres. Halteres, especially the knobs, pure white. Legs with the coxæ pale brown, the fore pair somewhat darker; trochanters brownish yellow; femora dark brown, ringed with white, the latter less extensive than the former, including three rings, placed respectively at near two-fifths, three-fourths and apex of segment; tibiæ yellowish brown, narrowly whitened at either end, slightly darkened just inside the whitened portions; tarsi pale yellowish brown, the basitarsi darker. Wings with a brownish-yellow tinge, unpatterned; veins and trichia slightly darker yellow. Venation Cell M_2 open by the atrophy of m ; vein 2nd A relatively long and sinuous.

Abdomen, including hypopygium, brownish black. Male hypopygium with the outer dististyle slightly widened on more than the basal half, on its lower margin here produced into a flattened lobe that terminates in three or four spinous setæ; beyond this point, the style much narrower, at apex again dilated into a head that is produced into a single strong spine and provided with a

dense brush of setæ. Inner dististyle unusually broad and flattened. Gonapophyses with tips obtusely rounded.

Hab. Ecuador (Napo-Pataza).

Holotype, ♂, Abitagua, altitude 1200 metres, April 7, 1937 (*Macintyre*). *Allotopotype*, ♀, April 5, 1937. *Paratopotypes*, 4 ♂ ♀, April 2–11, 1937 November 21, 1937 (*Macintyre*).

Among the regional species, *Erioptera* (*Erioptera*) *polytricha* is most similar to *E.* (*E.*) *polydonta* Alexander, of Peru. The two species differ conspicuously in the structure of the male hypopygium. A third described member of the group, *E.* (*E.*) *multiannulata* Alexander, of south-eastern Brazil, is still known only from the female sex but will certainly be found to possess strong characters in the hypopygium when the male is available.

Erioptera (*Helobia*) *colombiana microptera*, subsp. n.

Male.—Length about 4.5 mm.; wing 2.8 × 0.7 mm.

Characters as in typical *colombiana* Alexander, differing especially in the reduced wings of the male and, presumably, also of the still unknown female.

Wings only a little more than one-half the length of body but normally proportioned as to length and breadth; ground-colour yellowish, with the usual spotted and clouded pattern which is only a little less extensive than the pale ground areas; longitudinal veins and tips of veins beyond cloud distinctly clouded. Venation as compared with the typical form showing *Rs* somewhat shorter; supernumerary cross-vein in cell *R*₃ at near two-fifths the length of cell and removed some distance basad from the level of the tip of vein *R*₁₊₂; cell 1st *M*₂ relatively small; vein 2nd *A* at the lowest point of its bend almost reaching the posterior margin. In typical *colombiana*, the ground-colour of the wings is more whitened, with the dark clouds much less extensive in area to the ground. Male hypopygium as compared with the typical form, with the inner dististyle more narrowed but still obtuse at apex. Gonapophyses slightly different, the notch between the outer larger blade and the small, more basal lobe deeper and more conspicuous, the outer blade less produced on its extreme apical portion.

Hab. Ecuador (Chimborazo).

Holotype, ♂, Riobamba, altitude 2700 metres, April 20, 1939 (*Brown*).

Molophilus (Molophilus) brownianus, sp. n.

Belongs to the *plagiatus* group; general coloration dark brown; antennæ (male) relatively elongate, black throughout; halteres blackened; wings with a brownish tinge, the stigmal region faintly darker; male hypopygium with the basal dististyle a moderately long, gently curved rod that terminates in a long straight spine, immediately before apex on lower face with a group of five or six appressed spines.

Male.—Length about 4.3–4.5 mm.; wing 5.2–5.6 mm.; antenna about 2 mm.

Rostrum and palpi black. Antennæ (male) relatively elongate, as shown by the measurements, black throughout; flagellar segments subcylindrical to subfusiform, with abundant outspreading verticils. Head dark brownish grey.

Pronotum dark brown; lateral pretergites obscure yellow. Mesonotum almost uniform dark brown, the præscutal interspaces a little darker than the stripes; scutellum dark. Pleura brownish black, sparsely pruinose. Halteres blackened, knobs elongate. Legs with the coxæ and trochanters obscure brownish yellow; femora yellowish brown; tibiæ brown; tarsi black; fore tibiæ slightly swollen subbasally but not differentiated in colour. Wings with a brownish tinge, the stigmal region faintly darker, ill-delimited; veins pale brown. Venation: Vein R_2 some distance beyond level of $r-m$; petiole of cell M_3 a little longer than the feebly sinuous $m-cu$; vein 2nd A elongate, ending about opposite the cephalic end of $m-cu$.

Abdomen, including hypopygium, black. Male hypopygium with the beak of basistyle relatively slender, acutely pointed at apex. Outer dististyle with the margin of the outer or shorter arm microscopically serrulate. Basal dististyle a moderately long, gently curved, simple rod that terminates in a long straight spine, immediately before apex on the mesal or inner face with a group of five or six appressed spines; remainder of style with scattered setigerous tubercles. Phallosome a depressed glabrous plate, its apex obtuse.

Hab. Ecuador (Tungurahua).

Holotype, ♂, Tungurahua, Minza Chica, altitude 3500 metres, April 7, 1939 (*Brown*). *Paratopotype*, ♂, April 9, 1939.

I am most pleased to name this species for the collector, Professor F. Martin Brown, whose important paper* on entomological collecting localities in Ecuador is invaluable to workers on this area. The species is closest to *Molophilus* (*Molophilus*) *capricornis* Alexander and *M.* (*M.*) *remiger* Alexander, differing most evidently in the structure of the male hypopygium, especially the basal dististyle.

* F. Martin Brown, "A Gazetteer of Entomological Stations in Ecuador," *Ann. Ent. Soc. America*, xxiv. pp. 809-851 (1941).