

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

In the present report I wish to continue the discussion of the rich collections of Peruvian Tipulidæ made by Mr. Felix Woytkowski in the Departments of Ayacucho and Junin. The species discussed herewith all belong to the tribes Hexatomini and Eriopterini. I wish to express my deep thanks to the collector for his determined efforts to make known the rich crane-fly fauna of Peru. All types are preserved in my collection of these flies.

*Epiphragma (Epiphragma) felix*, sp. n.

Size large (wing over 12 mm.); mesonotal præscutum with four grey stripes on posterior half, these enclosing four narrower and more restricted brown lines; antennal flagellum beyond the fusion-segment uniform brownish black; femora dark brown, almost unpatterned; wings yellow, with a conspicuous brown pattern that is in part ocelliform, leaving extensive unpatterned ground areas before and beyond the origin of *Rs* and in the outer medial field; wing outline slightly falciform.

*Male.*—Length about 11–11.5 mm.; wing 12.5–13 mm.; antenna about 3 mm.

*Female.*—Length about 13.5 mm.; wing 14.5 mm.; antenna about 3.5 mm.

Rostrum brown; palpi dark brown. Antennæ moderately long, a little longer in the female; scape dark brown; fusion-segment yellow, remainder of flagellum brownish black; fusion involving two segments; outer flagellar segments with elongate verticils that are subequal in length to the segments. Head above fulvous, the centre of vertex extensively brownish grey, with a capillary blackened median vitta.

Pronotum buffy yellow, its scutum with a median blackened line. Mesonotal præscutum with the disk almost covered by four grey stripes, the posterior portions of which enclose more restricted and narrower brown lines; cephalic, humeral and lateral borders of præscutum broadly and conspicuously dark brown; scutum grey, each lobe and the median region patterned with brown; scutellum brownish grey, a little darkened medially at base, parascutella dark; mediotergite grey with a conspicuous median brown vitta that ends in a point just before the posterior border; posterior-lateral angles of mediotergite and caudal end of pleurotergite somewhat more reddish brown, the remainder of pleurotergite grey pruinose. Pleura grey pruinose, restrictedly patterned with brown, including vague and narrow longitudinal stripes that are much broken, the most dorsal extending from the cervical region across the propleura, anepisternum, dorsal pteropleurite, on to the pleurotergite; the other dark lines are even more broken, the median one occupying the suture between the anepisternum and sternopleurite, the ventral stripe occupying the ventral sternopleurite and meron and covering parts of all coxæ. Halteres yellow, the knobs weakly darkened. Legs with the coxæ pale, narrowly patterned with brown, on the posterior and middle pairs occupying the bases, on the fore coxæ at near mid-length; trochanters yellow; femora obscure yellow basally, chiefly dark brown beyond; in cases with the extreme tips and a subterminal ring barely brightened; tibiæ yellow, the tips narrowly more darkened; tarsi obscure yellow, the outer segments more darkened, in cases, the posterior tarsi more uniformly darkened. Wings yellow with a conspicuous brown pattern that is in part ocelliform, the areas along the costal border darker; unusually extensive areas of the pale ground in the basal cells on either side of the complete

ocellus at origin of *Rs*; outer radial and medial fields likewise with a comparatively extensive ground area: cell 2nd *A* with eight or nine dark dashes, outer end of cell 1st *A* with three or four such lines; basal half of cell 1st *A* almost free from dark markings; central portion of cell *Cu* with three or four dark clouds that are more or less confluent; marginal dark areas in outer radial field without pale centres; veins yellow, darker in the patterned areas. Wing-shape slightly falcate. Venation *Rs* long, about five times  $R_{2+3+4}$ , angulated and sometimes spurred at origin;  $R_{2+3+4}$  short, subequal to *m-cu*; veins beyond cord long, their outer ends more or less decurved; cell  $M_1$  deep; cell 1st  $M_2$  subrectangular.

Abdominal tergites chiefly dark brown, the basal two segments more variegated with yellow; sides of the basal rings of succeeding tergites more or less variegated with yellow; sternites brown basally and laterally, the central and caudal portions of the segments more variegated with obscure yellow; hypopygium brownish yellow. Male hypopygium with the inner dististyle unusually broad and flattened, much longer than the outer style. Interbases with the recurved tips relatively short. Tergal lobes small, subtriangular, the obtuse tips separated by a broader U-shaped median notch.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Yanamonte, La Mar, in fog forests, altitude 3000–4100 metres, August 18, 1941 (*Woytkowski*). *Allotopotype*, ♀, August 28, 1941. *Paratopotype*, ♂, July 26, 1941.

The species is dedicated to the collector, Mr. Felix Woytkowski, to whom I am greatly indebted for invaluable assistance in my survey of Peruvian Tipulidæ. This handsome fly is most similar to species such as *Epiphragma* (*Epiphragma*) *diadema* Alexander, differing conspicuously in the wing-pattern, venation, and almost unpatterned femora.

*Epiphragma* (*Epiphragma*) *melaxantha*, sp. n.

Allied to *xanthomela*; general coloration brownish black, the præscutum with four more greyish-brown stripes; antennæ elongate, black, the fusion-segment of flagellum yellow; coxæ extensively blackened; trochanters brownish black; femora and tibiæ black, patterned

with yellow wings whitish subhyaline, heavily patterned with brown; anal cells with relatively few darkened areas; interspaces between the ocellate areas in radial field very narrow, subequal in width to the outer darkened ring; posthumeral costal space extensively pale *m-cu* beyond mid-length of cell 1st  $M_2$ ; basal abdominal sternites brownish black, their caudal borders broadly and conspicuously yellow.

*Female*.—Length, about 9.5 mm.; wing 9 mm.; antenna about 3.4 mm.

Rostrum brownish black; palpi black. Antennæ with scape and pedicel black; basal segment of flagellum yellow, succeeding segments uniformly black; fusion-segment involving two segments, elongate, about one-half longer than the succeeding segment; outer flagellar segments long-cylindrical, with elongate verticils that are very slightly shorter than the segments. Head dull fulvous, especially in front and on anterior orbits; posterior portion of vertex extensively dark brown.

Pronotum dark brown, the scutellum and pretergites obscure yellow. Mesonotal præscutum brownish black on sides, the disk with four more greyish-brown stripes, the intermediate pair separated on cephalic portion by a capillary dark vitta; scutal lobes extensively blackened, the median portion, together with the scutellum and postnotum more brownish grey pruinose. Pleura chiefly black, with a more or less distinct paler longitudinal stripe extending from behind the fore coxæ to the base of abdomen, traversing the dorsal sternopleurite and meron. Halteres elongate, chiefly pale brownish yellow, the base of stem and the knob a little paler. Legs with the coxæ blackened, the tips of the fore and middle pair narrowly paler, trochanters brownish black, femora black, the bases restrictedly obscure yellow, tip and subterminal ring narrowly pale, the latter slightly more whitish than the former; tibiæ brownish black, the extreme base yellow, the tips more extensively so; tarsi obscure yellow. Wings with the ground whitish subhyaline, heavily patterned with brown, the pattern in part ocelliform; all costal areas still darker and entire; ocelli at origin of *Rs* and at anterior cord large and open, greatly restricting the interspaces; cell 2nd *A* with five dark marks additional to the terminal one cell 1st *A*

with two such marginal dashes; cell *Cu* with a single darkening in addition to the terminal one veins brown, more yellowish in the costal interspaces. Venation *Rs* relatively long, angulated and short-spurred at origin; *m-cu* beyond mid-length of cell 1st *M*<sub>2</sub>.

Abdominal tergites brownish black, the extreme caudal borders paler; sternites brownish black, the caudal portions of the proximal six segments conspicuously yellow, where best developed involving more than one-fourth the length of the segment; genital shield brownish black; valves of ovipositor, especially the cerci, rich orange-yellow.

*Hab.* Peru (Junin).

*Holotype*, ♀, Tulumayo Valley, Tarma, altitude 4000–8000 ft., November 4, 1940 (*Woytkowski*).

The most similar species is *Epiphragma (Epiphragma) xanthomela* Alexander, of Ecuador, which has the legs somewhat similarly patterned, including the blackened coxæ and trochanters; this latter fly differs in details of pattern of body-coloration, legs and wings, and in slight features of venation. The nature of the antennæ in the females of both of these species indicates the possession of a longer organ in the still unknown male sex.

*Epiphragma (Epiphragma) atroterminata*, sp. n.

General coloration of mesonotum dark brown, the usual præscutal stripes not or scarcely differentiated; antennæ short, the fusion-segment comprised of two completely united segments; dorsal thoracic pleura, including the dorsopleural membrane, black; halteres relatively long, pale yellow, the base of knob infuscated; outer half of femora black, with two narrow subterminal yellow rings, the actual apex conspicuously black; wings yellow, very heavily patterned with brown, the markings in part ocelliform; abdominal tergites dark brown, the impressed areas of basal rings not differentiated in colour; male hypopygium with the tips of the interbasal rods acute but not recurved.

*Male*.—Length about 9 mm. wing 10.5 mm.; antenna about 2.1 mm.

*Female*.—Length about 9 mm.; wing 10.2 mm. antenna about 2 mm.

Rostrum obscure yellow, palpi black. Antennæ short in both sexes; scape and pedicel black, fusion-segment obscure yellow, darker basally; succeeding flagellar segments obscure yellow to pale brown, the outer ones passing into black; fusion-segment comprised of two entirely united segments; succeeding segments cylindrical, the outer ones more elongate, provided with conspicuous verticils. Head above dark orange-brown, brightest on front; central portion of vertex chiefly occupied by a large dark brown area.

Pronotum dark brown medially, restrictedly orange on sides. Mesonotal præscutum chiefly dark brown, the usual stripes poorly differentiated or delimited, the lateral pair a little paler and more distinct; scutal lobes dark brown, the central area and the scutellum paler, obscure brownish yellow; postnotum dark brown, sparsely pruinose. Dorsal pleurites, including the dorsopleural membrane, brownish black; ventral pleurites, especially the sternopleurite, ventral pteropleurite and meron much paler, especially on the dorsal portion where a more or less distinct pale stripe is formed. Halteres relatively long, pale yellow, the base of knob infuscated. Legs with the coxæ dark brown, especially on their outer faces; trochanters obscure brownish yellow; femora obscure brownish yellow on about the proximal half, the distal half black, enclosing two narrow but very distinct and conspicuous yellow rings; tips of all femora black, a little narrower than the outermost yellow annulus; tibiæ brownish black, the subbasal portion and extreme apex yellow; basitarsus obscure yellow to brownish yellow, the outer tarsal segments yellow. Wings with the restricted ground-colour yellow, more intense in the prearcular and costal fields; a very heavy brown pattern that is in part ocelliform, the chief rings centreing at arculus, origin of *Rs*, cord and fork of  $M_{1+2}$ ; in the allotype the dark colour is very extensive, obliterating or greatly reducing the ground-colour posterior margin of cell *2nd A* with the axillary border and about four dark spots additional to the terminal one; margin of cell *1st A* with one or two similar dark areas; cell *Cu* extensively darkened, interrupted by a nearly complete ground band that traverses the entire wing before the cord; veins dark brown, yellow in the interspaces. Venation:

*Rs* relatively short, angulated and spurred at origin; *m-cu* from about two-thirds to approximately its full length beyond the fork of *M*.

Abdominal tergites almost uniformly dark brown, the lateral borders still darker; impressed areas of basal rings not paler; sternites obscure brownish yellow, the extreme bases and lateral margins blackened. Male hypopygium with the tergal lobes low, triangular, separated by a notch of approximately the same size and outline. Inner dististyle relatively narrow, about one-third longer than the outer. Interbasal rods with the tips acute but not abruptly recurved as is common in many species of the genus.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Yanamonte, La Mar, in fog forests, altitude 3000–4100 metres, October 2, 1941 (*Woytkowski*).  
*Allotopotype*, ♀, September 29, 1941.

*Epiphragma* (*Epiphragma*) *atroterminata* is readily distinguished from the other numerous regional members of the genus by the pattern of the legs, especially the femora, where there are three black rings enclosing two yellow ones, the actual apex being black. In virtually all other species the actual femoral tip is yellow excepting in those species where the femur is uniformly darkened or black, including *E.* (*E.*) *hirtistylata* Alexander and *E.* (*E.*) *varia* (Wiedemann).

*Epiphragma* (*Epiphragma*) *musicola*, sp. n.

General coloration of mesonotal præscutum brownish grey, with a large opaque brownish-black lateral spot; proximal two flagellar segments yellow, not fused, remaining flagellar segments black; thoracic pleura black; halteres obscure yellow, the knobs dark brown; bases of coxæ broadly black; femora yellowish brown, with a broad dark brown subterminal ring; tibiæ and tarsi yellow; wings yellow, extensively spotted and dotted with brown; male hypopygium with the tergal lobes unusually broad and truncated; recurved tips of inter-bases unusually long.

*Male*.—Length about 8.5–9 mm.; wing 10.5–11 mm. antenna about 3.8 mm.

*Female*.—Length about 9.5–10 mm.; wing 10 mm.

Rostrum brownish yellow ; palpi brownish black. Antennæ moderately long ; scape and pedicel black, the former sparsely pruinose ; basal two flagellar segments light yellow, remaining segments black with the incisures of the more proximal segments a little paler ; two basal flagellar segments entirely separate, not united into a fusion-segment ; outer segments long-cylindrical, subequal in length to their longest verticils. In the female, the two basal flagellar segments are similarly entirely separate from one another. Head brownish grey, the front a trifle more yellow pollinose ; a narrow darker brown median vitta on the vertex and occiput.

Pronotum obscure yellow, broadly dark brown medially, on sides passing into black. Mesonotal præscutum chiefly covered by four brownish-grey stripes that are all more or less confluent, the intermediate pair separated on cephalic half by a capillary black median vitta, the posterior interspaces represented by narrow lines on their caudal portions only ; cephalic and humeral portions of præscutum infuscated, more or less reddened on humeral region sides of præscutum with a large opaque brownish-black lateral spot ; scutum brownish grey, each lobe variegated by two more or less distinct brown areas, the median portion less evidently darkened ; scutellum brownish grey, with a conspicuous dark brown pit on either side at base ; postnotum grey pruinose, with a capillary brownish-black median vitta. Pleura black, very sparsely pruinose ; dorsopleural membrane darkened. Halteres elongate ; stem obscure yellow, knob dark brown. Legs with the coxæ yellow, blackened basally, on fore pair occupying the proximal two-thirds but most intense across the middle, the remaining coxæ more narrowly blackened ; trochanters yellow femora yellowish brown, clearer basally, the tip and a subterminal ring clearer yellow, the two enclosing a relatively broad dark brown ring ; tibiæ and tarsi yellow, the outer tarsal segments infuscated. Wings relatively broad, the ground-colour yellow ; membrane extensively spotted and dotted with brown, the usual ocelliform pattern almost lost, the only ocelli being relatively small ones centreing at origin of *Rs* and over anterior cord ; costal series of spots larger and darker all remaining cells of wing with abundant paler brown spots and dots ; cell *2nd A* with from five



to eight transverse brown dashes, cell 1st  $A$  with two or three such areas; veins brownish yellow, darker in the patterned areas. In the allotype female the dark pattern is more extensive and the markings more or less confluent. Venation  $m-cu$  at near mid-length of cell 1st  $M_2$ .

Abdominal tergites dark brown, the caudal margins of the segments narrowly paler; impressed areas of basal rings also variegated by paler markings; sternites bicoloured, the bases and sides dark brown, the broader tips obscure yellow; hypopygium brown. Male hypopygium with the tergal lobes unusually broad and truncated, separated by a narrower shallow U-shaped notch. Inner dististyle relatively narrow. Interbases with the recurved apical points unusually long, about one-third the length of the stem of the interbase.

*Hab.* Peru (Junin).

*Holotype*, ♂, Tulumayo Valley, Tarma, altitude 4000–8000 ft., November 8, 1940 (*Woytkowski*). *Allotopotype*, ♀, November 4, 1940. *Paratopotypes*, 1 ♂, November 7, 1940; 1 ♀, November 4, 1940.

From the other regional species that have the wing-pattern broken into abundant dots and spots, including *Epiphragma* (*Epiphragma*) *adspersa* (Wiedemann), *E. (E.) hirtistylata* Alexander, and *E. (E.) sappho*, sp. n., the present fly differs conspicuously in all details of coloration of the body and appendages, and in the structure of the antennæ and the male hypopygium. The collector noted that this species was associated with *E. (E.) nigroplagiata* Alexander, hitherto known only from Ecuador; both species found resting on mossy tree-trunks in damp forests.

*Epiphragma* (*Epiphragma*) *sappho*, sp. n.

Size large (wing, female, over 12 mm.); mesonotum obscure yellow, conspicuously and irregularly patterned with brown; antennal flagellum conspicuously bicoloured, black and yellow; no fused flagellar segments; knob of halteres yellow; femora with a conspicuous white ring before the chiefly brown tips; wings light yellow, with an abundant brown spotted and dotted pattern; cell 1st  $M_2$  very strongly narrowed at its proximal end.

*Female*.—Length about 12 mm. wing 12·8 mm.; antenna about 3·9 mm.

Rostrum brown; palpi brownish black. Antennæ relatively long for the female sex; scape and pedicel light brownish yellow; basal flagellar segment yellow, succeeding segments bicoloured, their bases black, the apices light yellow; on the first of these segments the yellow exceeds the black, thence decreasing in amount to the antepenultimate segment, where the pale colour is much reduced; terminal two segments uniformly dark; no fusion of any of the segments; outer segments elongate, a little narrowed outwardly, the intermediate segments a little longer than their verticils. Head brownish grey, the centre of vertex with a triangular darker brown area.

Pronotum obscure yellow, vaguely patterned with darker. Mesonotal præscutum obscure yellow, conspicuously and irregularly patterned with brown, including four brown stripes and additional lines and dashes, arranged as follows:—A very delicate median vitta; posterior interspaces each with a dark mark; humeral and lateral portions of præscutum more extensively and conspicuously blackened scutum obscure yellow, variegated with brown, including two spots on each lobe and a median darkening; scutellum and mediotergite brownish grey, with a continuous brown median vitta. Pleura and pleurotergite extensively dark brown, still darker on dorsal portion adjoining the broad yellow dorsopleural membrane; posterior sclerites of pleura a little more pruinose. Halteres yellow, the base of knob broadly dark brown, the apex pale yellow. Legs with the coxæ testaceous yellow, darkened basally, this broadest on fore pair, very narrow on the posterior coxæ; trochanters obscure brownish yellow; femora yellow, more darkened outwardly, with a broad, conspicuous white subterminal ring, the tip beyond chiefly dark brown but with its extreme apex pale; on the posterior femora the basal portion is more uniformly pale; tibiæ and tarsi yellow, their tips very narrowly darker; outer tarsal segments slightly more darkened. Wings broad, light yellow, with an abundantly dotted and spotted brown pattern; ocellate pattern virtually lacking, represented only by a very compact area at origin of *Rs*; other major brown areas near arcus, along cord and

outer end of cell 1st  $M_2$ , as small marginal spots at ends of all longitudinal veins, with a few other similar spots in the anal cells and the extensive axillary field; the paler brown dots are very numerous, occurring in all cells, some more or less confluent; radial field on either side of  $R_s$  clearer and more nearly free from dots; veins yellow, darker in the patterned areas. Venation:  $R_s$  long, angulated and spurred at origin;  $R_{2+3+4}$  short, about one-half longer than  $R_{2+3}$ ;  $r-m$  long and arcuated; cell 1st  $M_2$  strongly narrowed at proximal end; petiole of cell  $M_1$  a little less than twice the length of  $m$ ;  $m-cu$  about one-fourth its length beyond the fork of  $M$ .

Abdominal tergites chiefly testaceous yellow, slightly darker on the outer segments, the impressions of the basal rings a little brighter; basal sternite and sides of the first tergite marked with brown; outer segments very pale brown, vaguely patterned with yellow; vestiture of abdomen yellow, conspicuous. Ovipositor with valves long and conspicuous, reddish horn-colour.

*Hab.* Peru (Ayacucho).

*Holotype*, ♀, Yanamonte, La Mar, in fog forests, altitude 3000–4100 metres, October 11, 1941 (*Woytkowski*).

*Epiphragma (Epiphragma) sappho* is entirely distinct from the other species of the genus, having abundantly spotted and dotted wings and with the ocelliform dark pattern lacking or virtually so. Among such species it is closest to *E. (E.) muscicola*, sp. n., which differs in all details of coloration of the body, antennæ, legs and wings, and in the structure of the antennæ and the venation.

*Shannonomyia phæostigma*, sp. n.

General coloration light grey, the præscutum with poorly indicated darker stripes; halteres uniformly pale yellow; legs yellow, the tips of femora and tibiæ a little darkened; wings cream-yellow, conspicuously variegated by the oval dark brown or brownish-black stigma veins yellow.

*Male*.—Length about 7–8 mm.; wing 7.5–9 mm.

*Female*.—Length about 8–10 mm.; wing 9–10 mm.

Rostrum dark brown, sparsely pruinose; palpi black. Antennæ short, pale brown, the outer segments passing into dark brown; flagellar segments oval, with long

verticils. Head light grey; anterior vertex moderately wide, approximately twice the diameter of the scape.

Pronotum and mesonotum light grey, the præscutum with the humeral portion slightly more yellowish; pronotum with indications of a slightly darker median vitta; præscutum with similar indications of two intermediate darker stripes, the lateral pair barely indicated; scutal lobes weakly darkened. Pleura grey, the pleurotergite and adjoining portion of pteropleurite a little paler. Halteres relatively long, uniformly pale yellow. Legs with the coxæ yellow, the fore pair a little infuscated; trochanters yellow remainder of legs yellow, the tips of the femora a little darkened, of the tibiæ more narrowly so; outer tarsal segments brownish black. Wings uniformly cream-yellow, conspicuously variegated by the oval dark brown to brownish-black stigma; veins light yellow, those in the stigmal area darker. Venation: *Rs* relatively long, exceeding cell 1st  $M_2$  in length; *m-cu* about opposite mid-length cell 1st  $M_2$ .

Abdominal tergites dark brownish grey, the outer segments, including hypopygium, almost black; basal sternites pale medially, darkened on sides, the outer segments blackened. Male hypopygium with the outer dististyle forked at apex, the outer spine a little longer and more slender than the apical one. Ædeagus elongate, conspicuously sinuous on its basal third.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Yanamonte, La Mar, in fog forests, altitude 3000–4100 metres, October 7, 1941 (*Woytkowski*). *Allotopotype*, ♀, August 26, 1941. *Paratopotypes*, numerous ♂♀, July 29–October 7, 1941.

*Shannonomyia phæostigmosa* is readily told from all other hitherto described members of the genus by the nature of the wing pattern.

*Shannonomyia ignava*, sp. n.

General coloration grey, the thoracic notum with a conspicuous brownish-black median stripe, most marked on the pronotum and præscutum; antennæ and legs black; wings whitish subhyaline, patterned with brown; *Rs* relatively long, angulated and spurred at origin;  $R_{2+3+4}$  long, exceeding one-half the length of vein  $R_3$ ; cell 1st  $M_2$  unusually long and irregular in outline;

abdomen dark brown ; male hypopygium with the tergal lobes widely separated, long and conspicuous ; gonapophyses appearing as simple curved hooks.

*Male*.—Length about 5 mm. wing 5.8–6 mm. antenna about 1–1.1 mm.

*Female*.—Length about 6 mm. wing about 6 mm.

Rostrum black, sparsely pruinose ; palpi black. Antennæ short, scape and pedicel brownish black, flagellum black ; flagellar segments oval, the outer segments more elongate ; verticils exceeding the segments in length. Head dark grey.

Pronotum and mesonotum grey with a very conspicuous brownish-black median stripe extending from the pronotum to the suture, thence even narrower but more or less distinct to the abdomen ; scutal lobes with scarcely darkened centres. Pleura grey. Halteres uniformly pale yellow. Legs with the coxæ brownish-yellow, sparsely pruinose ; trochanters obscure yellow ; remainder of legs black. Wings whitish subhyaline, the prearcular and costal fields a trifle more yellowish a restricted but conspicuous brown pattern arranged as follows :—Arculus ; origin of *Rs* ; fork of *Sc* stigma cord and outer end of cell 1st  $M_2$  ; small marginal spots at ends of all longitudinal veins, least evident on  $R_5$  ; veins yellow, dark brown in the patterned areas. Venation  $Sc_1$  ending about opposite three-fourths *Rs*,  $Sc_2$  near its tip ; *Rs* relatively long, a trifle exceeding vein  $R_4$ , angulated and spurred at origin ;  $R_{2+3+4}$  conspicuous, exceeding one-half of vein  $R_3$  ; cell 1st  $M_2$  unusually long and irregular in outline, the second section of  $M_{1+2}$  varying from about one-half longer than the distal section of the vein to twice as long as this element ; basal section of  $M_3$  angulated and usually sending a spur from the point of angulation based into cell 1st  $M_2$  ; *m-cu* about one-third to two-thirds its length beyond the fork of *M*.

Abdomen, including hypopygium, dark brown, sparsely pruinose. Male hypopygium with the tergite, on either side, produced into a slender finger-like lobe, the space between very wide, fully five times the length of the lobe ; compared with *lathræa*, these lobes conspicuously longer. Outer dististyle blackened and bidentate at apex. *Ædeagus* elongate, strongly convoluted on proximal half. Gonapophyses appearing as a simple, strongly-

curved hook; in *lathræa*, each apophysis conspicuously bispinous.

*Hab.* Peru (Junin).

*Holotype*, ♂, Tulumayo Valley, Tarma, altitude 4000–8000 ft., October 1, 1940 (*Woytkowski*). *Allotopotype*, ♀, December 3, 1940. *Paratopotypes*, several ♂♀, October 1–November 7, 1940.

The nearest ally of the present fly is *Shannonomyia lathræa* Alexander, of Colombia, which differs in the brown coloration, pale legs, and distinctive details of venation and structure of the male hypopygium.

*Atarba (Ischnothrix) geminata*, sp. n.

General coloration brownish grey; antennæ (male) elongate, a little shorter than the body; scape and pedicel obscure yellow, flagellum black; knobs of halteres darkened; legs brown, the femoral bases more yellow; wings with a brownish tinge, the oval stigma darker; *Sc* short, *Sc*<sub>1</sub> ending just beyond the origin of *Rs*; *Rs* angulated before mid-length; vein *R*<sub>3</sub> oblique; basal abdominal segments bicoloured, yellow, each with a brownish-black central annulus; subterminal segments forming a uniformly blackened ring; male hypopygium with the outer dististyle blackened, the outer margin with numerous small black spines over the entire length; ninth sternite produced into two divergent spines to form a lyriform structure; eighth sternite produced into two small fleshy lobes.

*Male*.—Length about 6 mm.; wing 6 mm.; antenna about 5.3 mm.

*Female*.—Length about 6 mm.; wing 6 mm.

Rostrum obscure brownish yellow; palpi black. Antennæ (male) elongate, a little shorter than the body; scape and pedicel obscure yellow, flagellum black; flagellar segments long-cylindrical, with abundant coarse setæ and fewer more elongate ones, the latter conspicuously outspreading and chiefly unilateral in distribution. Head darkened, heavily light grey pruinose; anterior vertex about twice as wide as the diameter of scape.

Pronotum yellowish brown. Mesonotum brownish grey, without clearly defined markings, the humeral and lateral portions of præscutum somewhat more testaceous. Pleura brownish testaceous, sparsely pruinose, the dorsal

pleurites slightly more darkened. Halteres with stem obscure yellow, knob darkened. Legs with coxæ testaceous yellow, sparsely pruinose; trochanters yellow femora and tibiæ dark brown, the bases of the former more yellow; tarsi somewhat paler brown; tibial spurs and the claws very small. Wings (fig. 1) with a brownish tinge, the prearcular and costal fields slightly more yellow stigma oval, medium brown; a more or less

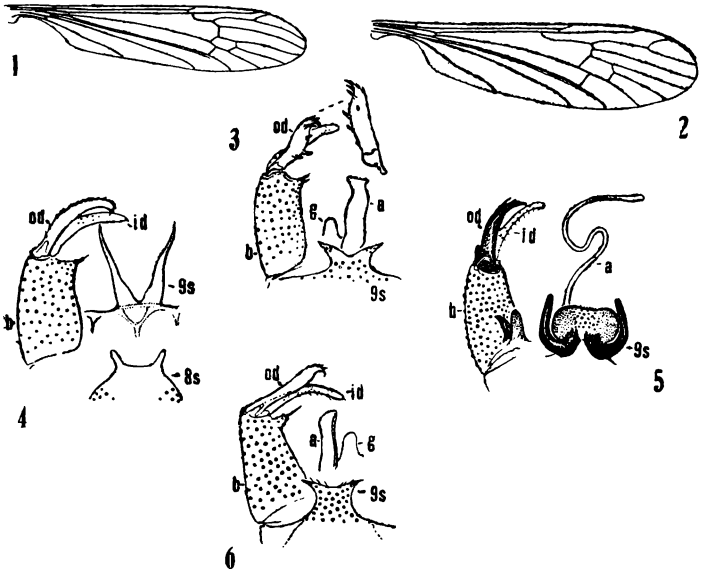


Fig. 1.—*Atarba (Ischnothrix) geminata*, sp. n.; venation.

Fig. 2.—*Atarba (Ischnothrix) supplicata*, sp. n.; venation.

Fig. 3.—*Atarba (Atarba) restricta*, sp. n.; male hypopygium.

Fig. 4.—*Atarba (Ischnothrix) geminata*, sp. n.; male hypopygium.

Fig. 5.—*Atarba (Ischnothrix) supplicata*, sp. n.; male hypopygium.

Fig. 6.—*Atarba (Atarba) melanomera*, sp. n.; male hypopygium.

(Symbols: a, aedeagus; b, basistyle; g, gonapophysis; id, inner dististyle; od, outer dististyle; s, sternites.)

distinct brown seam between the branches of *Cu*, best indicated on proximal half; veins brown, more yellowed in the brightened portions. Venation *Sc*<sub>1</sub> ending just beyond origin of *Rs*, *Sc*<sub>2</sub> just before this origin; *Rs* relatively short, almost squarely angulated at basal third; vein *R*<sub>3</sub> oblique to subperpendicular; *R*<sub>2+3+4</sub> subequal to *R*<sub>4</sub>; cell 1st *M*<sub>2</sub> relatively small, rectangular,

less than one-third as long as vein  $M_{1+2}$  beyond it;  $m-cu$  nearly one-half its length beyond fork of  $M$  cell 2nd  $A$  moderately wide.

Abdominal segments bicoloured, their bases and apices broadly obscure yellow, the intermediate portion of the segment brownish black to form narrow but conspicuous rings; subterminal segments uniformly blackened; hypopygium yellow; abdomen provided with abundant erect yellow setæ. Male hypopygium (fig. 4) with the ninth sternite, 9s, produced into two slender divergent spines, their tips acute; eighth sternite, 8s, somewhat similarly modified, the caudal margin produced and terminating in two short cylindrical lobes that are gently divergent, their tips obtuse. Outer dististyle, *od*, entirely blackened, provided with appressed spines along virtually all of the outer margin, these spines totalling from 18 to 20, including all sizes.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Ayna, La Mar, altitude 2400 metres, May 14, 1941 (*Woytkowski*). *Allotopotype*, ♀, May 16, 1941. *Paratopotypes*, ♂♀, with the types.

The nearest described ally of the present fly is *Atarba* (*Ischnothrix*) *argentinicola* (Alexander), which agrees in having both the eighth and ninth sternites of the male sex produced into paired lobes or spines. The present species differs in the details of venation and of structure of the male hypopygium, especially the outer dististyle and the sternal lobes.

*Atarba* (*Ischnothrix*) *supplicata*, sp. n.

General coloration of mesonotal præscutum light brown, the posterior sclerites darker; antennæ black throughout, in male nearly two-thirds as long as body; femora black, with yellow rings; wings with a weak brown tinge, sparsely patterned with darker brown; *Sc* relatively long,  $Sc_1$  ending about opposite mid-length of  $R_s$ ;  $R_3$  widely separated on wing-margin from  $R_{1+2}$ ; cell 1st  $M_2$  closed; male hypopygium with the ædeagus very long and sinuous; appendage of ninth sternite a depressed-flattened plate subtended on either side by an erect blackened rod.

*Male*.—Length about 6 mm.; wing 7-7.2 mm.; antenna about 3.8-4 mm.



*Female*.—Length about 6.5–7 mm. ; wing 7.5–7.7 mm.

Rostrum obscure yellow ; palpi testaceous yellow. Antennæ (male) nearly two-thirds as long as body, black throughout ; flagellar segments long-cylindrical, with short dense erect setæ and sparse verticils that are shorter than the segments. Head dark grey ; anterior vertex relatively wide, nearly two times the diameter of scape.

Pronotum and cephalic portion of mesonotum light brown, the præscutum broadly darker brown medially to form a more or less distinct stripe ; posterior sclerites of mesonotum dark brown. Pleura chiefly obscure yellow, the dorsal pleurites and the pleurotergite darker ; ventral sternopleurite and meron more weakly infuscated, sparsely pruinose. Halteres with stem pale, especially at base, knob darkened. Legs with coxæ and trochanters pale yellow ; femora yellow basally, passing into brownish black, usually with a yellowish subterminal ring and narrower yellow tips ; in cases, these pale rings are very conspicuous, in others much more obscure ; tibiæ brown, the tips narrowly darkened ; tarsi passing into black, the middle legs more uniformly darkened ; tibial spurs distinct. Wings (fig. 2) with a weak brownish tinge ; stigma large, oval, darker brown ; less distinct brown clouds at origin of *Rs*, on anterior cord, and less evidently on posterior cord and outer end of cell 1st  $M_2$  ; costal region a trifle more infuscated than remainder of ground ; veins brownish black, with long conspicuous black trichia ; veins of prearcular and costal fields somewhat paler. Venation : *Sc* relatively long,  $Sc_1$  ending about opposite mid-length of *Rs*,  $Sc_2$  near its tip ; *Rs* long, exceeding cell 1st  $M_2$  in length ; vein  $R_3$  oblique, the distance on wing-margin between  $R_{1+2}$  and  $R_3$  exceeding the length of the latter vein ; *m-cu* from about one-half to more than its length beyond the fork of *M*.

Abdominal tergites dark brown ; basal sternites more yellow, darker on sides and near their posterior borders ; succeeding sternites more uniformly darkened ; outer segments, including hypopygium, uniformly darkened ; abdomen with conspicuous erect pale setæ. Male hypopygium (fig. 5) with the appendage of the ninth sternite,  $9s$ , of unique form, appearing as a transversely oval flattened plate, subtended on either side by erect blackened arms that arise from near the cephalic portion of the plate.

Basistyle, *b*, conspicuously hairy. Outer dististyle, *od*, shorter than the inner, blackened with two strong spines on outer face near apex, with indications of still other smaller spinules. Inner dististyle, *id*, slender, darkened. Ædeagus, *a*, very long and slender, strongly sinuous. Gonapophyses appearing as a flattened dark-coloured outer plate, its tip obtuse, and an inner paler plate.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Yanamonte, La Mar, in fog forests, altitude 3000–4100 metres, September 2, 1941 (*Woytkowski*).

*Allotopotype*, ♀, with the type. *Paratopotypes*, 7 ♂♀, September 3–15, 1941 (*Woytkowski*).

*Atarba (Ischnothrix) supplicata* is readily told from all other regional species of the subgenus by the pattern and venation of the wings and, especially, the structure of the male hypopygium, notably the conformation of the appendage of the ninth sternite.

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

Allied to *heteracantha*; antennæ moderately long, basal flagellar segments bicoloured, their proximal ends narrowly yellow, the remainder of organ-black; thoracic dorsum light yellowish brown, unmarked; legs obscure yellow, the terminal tarsal segments passing into dark brown; wings brownish yellow, the stigma pale brown, poorly indicated; male hypopygium with the appendage of the ninth sternite very short-based, with conspicuous divergent horns; outer dististyle stout, with about three spines on lower face in addition to others grouped about the apical point.

*Male*.—Length about 5 mm.; wing 5–5.2 mm.; antenna about 2.6–2.7 mm.

Rostrum obscure brownish yellow; palpi black. Antennæ (male) moderately long, exceeding one-half the length of body; scape and pedicel obscure yellow; basal flagellar segments bicoloured, their proximal ends yellow, the remainder black, the latter colour much exceeding the yellow; on the first segment more than twice as extensive, on succeeding segments the yellow becoming more restricted, at about the eighth segment the segments becoming uniformly black; flagellar segments cylindrical, the verticils shorter than the segments; flagellar segments shorter than in *heteracantha*. Head light brown; anterior

vertex relatively narrow, a little wider than the diameter of scape.

Thoracic dorsum light yellowish brown to obscure yellow, without markings; setæ of præscutum relatively sparse but long and conspicuous, erect. Pleura testaceous brown, very sparsely pruinose. Halteres relatively short, pale. Legs with the coxæ and trochanters yellow; remainder of legs obscure yellow, the terminal tarsal segments passing into dark brown. Wings with a strong brownish-yellow tinge, the prearcular and costal fields lighter yellow; stigma very poorly indicated, pale brown; veins brownish yellow, clearer yellow in the brightened fields. Venation *Sc* short, *Sc*<sub>1</sub> ending opposite origin of *Rs*; cell 1st *M*<sub>2</sub> varying from short-rectangular to longer (the latter condition in the type); *m-cu* from one-third to one-fourth its own length beyond the fork of *M*.

Abdomen light brown, the incisures paler subterminal segments deepening to brownish black; basal sternites paler; hypopygium yellow, the outer dististyle blackened. Male hypopygium (fig. 3) much as in *heteracantha*, but differing in details. Appendage of ninth sternite, *9s*, unusually short-based, with conspicuous divergent horns. Both dististyles shorter than in *heteracantha*, especially the outer, *od*, which is provided with about three spines on the lower or ventral face, in addition to still others on outer margin grouped around the apical spinous point. *Ædeagus*, *a*, compressed-flattened, relatively short and stout. Gonapophyses, *g*, with tips obtusely rounded, margins smooth.

*Hab.* Peru (Ayacucho, Junin).

*Holotype*, ♂, Ayna, La Mar, Ayacucho, altitude 2400 metres, May 18, 1941 (*Woytkowski*). *Paratopotypes*, 2 ♂♂; *paratypes*, ♂♂, Tulumayo Valley, Tarma, Junin, altitude 4000-8000 feet, December 10, 1940.

*Atarba (Atarba) restricta* is closest to *A. (A.) heteracantha* Alexander, differing especially in the shorter antennæ and in the details of structure of the male hypopygium, especially the appendage of the ninth sternite and the dististyles, as discussed above.

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

Mesonotal præscutum, scutum and scutellum uniformly yellow, postnotum and dorsal pleurites blackened;

antennæ (male) approximately two-thirds the length of body, flagellum black; knob of halteres darkened; legs obscure yellow, the outer tarsal segments passing into black; wings whitish subhyaline, the stigma and a narrow cloud along cord slightly darkened; *Sc* short, cell 1st  $M_2$  closed; abdominal segments weakly bicoloured, black, the basal rings of the intermediate segments narrowly and indistinctly obscure brownish yellow; terminal segments blackened; male hypopygium with the plate of the ninth sternite entirely blackened, the angles produced lateral into acute spines.

*Male*.—Length about 6 mm.; wing 7 mm.; antenna about 4 mm.

Rostrum obscure yellow; palpi black, their incisures narrowly pale. Antennæ (male) approximately two-thirds the length of body; scape and pedicel brownish yellow, flagellum black; flagellar segments long-cylindrical; longest verticils of the more basal segments shorter than the segments themselves. Head pale brown in front and behind, the anterior vertex dark brownish grey; anterior vertex about one-third greater than the diameter of scape.

Pronotum brownish black. Mesonotal præscutum, scutum and scutellum uniformly yellow, unpatterned; postnotum blackened. Pleura with the ventral portions testaceous yellow, the dorsal sclerites, as well as the pleurotergite, dark brown, sparsely pruinose. Halteres with stem whitish, knob darkened. Legs with the coxæ and trochanters yellow; remainder of legs obscure yellow, the outer tarsal segments passing into black. Wings whitish subhyaline, the prearcular field more yellow; stigma oval, dark brown, conspicuous; a narrow and ill-defined dark cloud on cord, best indicated on the anterior cord; veins distad of cord dark brown, conspicuous; basad of cord paler, in the prearcular field yellowish. Venation *Sc* short,  $Sc_1$  ending a short distance before the origin of *Rs*,  $Sc_1$  more than one-half the length of *Rs*, the latter short and arcuated; branches of *Rs* extending generally parallel to one another for their entire length; cell 1st  $M_2$  rectangular; *m-cu* about three-fifths its length beyond the fork of *M*.

Abdominal segments weakly bicoloured, black, the basal rings of the intermediate segments narrowly and indistinctly obscure brownish yellow; outer segments

uniformly blackened; basistyles brownish yellow abdomen provided with abundant long pale setæ. Male hypopygium (fig. 6) with the plate of the ninth sternite, 9s, entirely blackened, as is the remainder of the segment, very conspicuous against the pale basistyle and phallosome; surface of plate provided with numerous strong setæ from coarse punctures; lateral angles produced laterad into acute spines. Basistyle, *b*, with subapical lobe on mesal face unusually large. Outer dististyle, *od*, with about five spines on distal third of outer margin, additional to the curved apical spine. Inner dististyle, *id*, narrow, darkened, the numerous punctures white and conspicuous, the style shaped more or less like a boomerang. Ædeagus, *a*, short and nearly straight, the greatly expanded apex pale and with its outline difficult to delimit. Gonapophyses, *g*, appearing as pale flattened plates, their margins entire, apex obtuse.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Yanamonte, La Mar, in fog forests, altitude 3000–4100 metres, September 22, 1941 (*Woytkowski*).

The only described species that is at all similar to the present fly is *Atarba* (*Atarba*) *columbiana* Alexander, which, while having the wing-pattern somewhat similar, differs in all other regards, including the coloration of the body and legs and in the pale sternal plate of the male hypopygium. The male antenna of the present fly is approximately one-half longer than in *columbiana*.

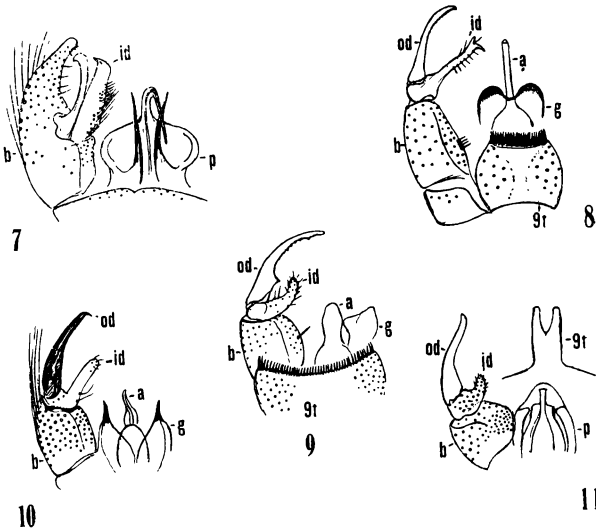
*Gnophomyia* (*Gnophomyia*) *azræl*, sp. n.

Belongs to the *luctuosa* group; general coloration of body, antennæ, halteres and legs black; wings with a dusky tinge, the costal border and stigma much deeper in colour; macrotrichia of wing-cells reduced or even lacking in male, present in female;  $Sc_2$  near tip of  $Sc_1$ ;  $R_{2+3+4}$  shorter than the oblique  $r-m$ ; cell 1st  $M_2$  shorter than any of the veins beyond it;  $m-cu$  just beyond the fork of  $M$ ; male hypopygium with the basistyle produced, both dististyles long and slender, subequal in length or with the outer style a little more elongate.

*Male*.—Length about 8–9 mm.; wing 10.5–11 mm.; antenna about 1.5 mm.

*Female*.—Length about 8–9 mm.; wing 10–11.5 mm.

Rostrum and palpi black. Antennæ relatively short ; flagellar segments passing through short-oval to elongate-oval ; longest verticils of the more proximal segments unilaterally distributed, of the outer segments shorter but more abundant. Head uniformly deep black.



- Fig. 7.—*Gnophomyia* (*Gnophomyia*) *azræel*, sp. n. ; male hypopygium.  
 Fig. 8.—*Gnophomyia* (*Gnophomyia*) *distifurcula*, sp. n. ; male hypopygium.  
 Fig. 9.—*Gnophomyia* (*Gnophomyia*) *nimbipennis*, sp. n. ; male hypopygium.  
 Fig. 10.—*Gnophomyia* (*Gnophomyia*) *oxymera*, sp. n. ; male hypopygium.  
 Fig. 11.—*Gnophomyia* (*Gnophomyia*) *longitergata*, sp. n. ; male hypopygium.

(Symbols : *a*, aedeagus ; *b*, basistyle ; *g*, gonapophysis ; *id*, inner dististyle ; *od*, outer dististyle ; *p*, phallosome ; *t*, tergite.)

Thorax uniformly black, conspicuously glabrous. Halteres and legs entirely black. Wings with a faint dusky tinge, becoming much deeper on the costal border, the latter confluent with the stigma ; veins brown to dark brown. Males usually with no macrotrichia in cells of wing, in some cases with a few trichia in cells  $R_2$  and  $R_3$  ; in female, trichia abundant in the apices of cells beyond cord. Venation :  $Sc_2$  a short distance from the tip of  $Sc_1$ , opposite the fork of the long  $R_s$  ;  $R_2$  at or just beyond

the fork of  $R_{2+3+4}$ , the latter a trifle shorter than the oblique  $r-m$ ; cell 1st  $M_2$  rectangular, shorter than any of the veins beyond it;  $m-cu$  just beyond the fork of  $M$ ; cell 2nd  $A$  wide.

Abdomen, including hypopygium, black. Ovipositor with cerci long and slender, black basally, the upturned tips paling to horn-colour. Male hypopygium (fig. 7) with the basistyle,  $b$ , produced into a flattened glabrous blade that extends caudad beyond the level of the tips of the dististyles, the latter inserted at near mid-length of the basistyle. Both dististyles elongate, the outer more slender than the inner, at its apex more or less short-cultriform. Inner dististyle,  $id$ , on inner margin of basal half provided with several very long setæ; on outer margin at about two-thirds the length with a dense group of about a score of shorter but strong bristles. Phallosome,  $p$ , as in the group, provided with two long slender spines, the apex of the ædeagus elongate and very strongly recurved.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Yanamonte, La Mar, in fog forests, altitude 3000–4100 metres, September 3, 1941 (*Woytkowski*). *Allotopotype*, ♀. *Paratopotypes*, 2 ♂♂, 1 ♀, September 1–3, 1941.

*Gnophomyia* (*Gnophomyia*) *azrael* is quite distinct from all other members of the *luctuosa* group that have the body and appendages uniformly black. The marked reduction or total lack of macrotrichia in the wing-cells of the male, and the structure of the male hypopygium, readily separate the fly from the other generally similar species of the group, such as *G. (G.) funebris* Alexander, *G. (G.) melancholica* Alexander, and *G. (G.) pammelas* Alexander.

*Gnophomyia* (*Gnophomyia*) *regnatrix*, sp. n.

Size large (wing, female, 10 mm. or more); general coloration of præscutum buffy on sides, the disk with three dark brown stripes; basal flagellar segment pale; pleura obscure yellow, with a conspicuous blackish dorsal stripe; legs yellow, the femora with a narrow but conspicuous subterminal dark brown ring; wings yellow, with a sparse but evident brown pattern;  $Sc_1$  long;

cell 1st  $M_2$  long, exceeding  $R_s$  in length; ovipositor with the cerci short, compressed-flattened.

*Female*.—Length about 9–10 mm.; wing 10–11.3 mm.

Rostrum testaceous yellow; palpi brownish black. Antennæ with scape dark brown; pedicel brownish yellow; first flagellar segment yellow, the succeeding segments passing into black; flagellar segments oval, the verticils of outer portion of organ exceeding the segments in length. Head obscure fulvous brown; anterior vertex moderately wide, nearly three times the diameter of scape.

Pronotum obscure yellow above, infuscated on sides. Præscutum with the lateral portions buffy, the disk chiefly occupied by three dark brown stripes, their surface, especially of the median stripe, sparsely pruinose; scutum reddish brown, the centres of the lobes infuscated; scutellum obscure brownish yellow, restrictedly darkened medially at base; mediotergite light brown, sparsely pruinose, paling to obscure yellow on sides, this latter colour also covering the dorsal portion of the pleurotergite. Pleura yellow, the dorsal portion with a broad blackish stripe that extends caudad across the ventral pleurotergite and base of halteres to abdomen; ventral pleurites yellow, the sternopleurite more reddish; surface of pleura very sparsely pruinose. Halteres with stem yellow, knob weakly darkened. Legs with the coxæ and trochanters yellow; femora yellow, each with a narrow but conspicuous, nearly terminal dark brown ring; tibiæ and basal three tarsal segments obscure yellow, their tips narrowly dark brown, the two outer tarsal segments uniformly darkened. Wings yellow, sparsely but conspicuously patterned with brown, including restricted seams at origin of  $R_s$ ,  $Sc_2$ , cord and outer end of cell 1st  $M_2$ ; stigma very limited, appearing as a narrow seam on  $R_2$  and along  $R_{1+2}$ ; additional brown washes in outer ends of cells  $R_5$  and  $M_3$ , the former adjoining vein  $M_{1+2}$ ; even less evident washes at basal third of cell  $Cu$  and close to base of cell 2nd  $A$  veins yellow, darker in the patterned areas. Venation:  $Sc_2$  some distance from the tip of  $Sc_1$ , at near mid-distance between origin of  $R_s$  and tip of  $Sc_1$ ;  $R_{2+3+4}$  gently arcuated to nearly straight, about two-fifths the length of  $R_s$ ; veins  $R_3$  and  $R_4$  long, paralleling one another, gently decurved, the latter vein



reaching the wing-tip; basal section of  $R_5$  about one-third as long as  $r-m$ ; cell 1st  $M_2$  unusually long and narrow, exceeding  $R_5$  and subequal in length to the long distal section of vein  $M_{1+2}$ ;  $m$  strongly angulated at mid-length;  $m-cu$  more than its own length beyond the fork of  $M$ ; cell 2nd  $A$  wide, especially so opposite the axillary angle.

Abdomen chiefly brown; ovipositor with the cerci short, compressed-flattened, with obtuse tips; hypovalvæ yellow, shorter than the cerci, their tips obtusely rounded.

*Hab.* Peru (Ayacucho).

*Holotype*, ♀, Ayna, La Mar, altitude 2400 metres, September 2, 1941 (*Woytkowski*). *Paratype*, ♀, Yanamonte, La Mar, altitude 3000–4100 metres, October 7, 1941 (*Woytkowski*).

The nearest described relative seems to be *Gnophomyia* (*Gnophomyia*) *chilota* Alexander, of southern Chile. The present fly differs in the larger size, conspicuously-patterned wings, venation, and darkened femoral tips.

*Gnophomyia* (*Gnophomyia*) *distifurcula*, sp. n.

General coloration black, the surface somewhat polished; antennæ, halteres and legs black; wings with a blackish tinge, the cells beyond the cord darker; a conspicuous, still darker cross-band almost completely crossing the wing at cord; male hypopygium with the tergal plate terminating in a continuous comb of about fifty strong blackened spinous setæ; inner dististyle slender, black, at apex divided into two conspicuous teeth.

*Male*.—Length about 4.5–5.5 mm.; wing 5–6 mm. antenna about 2.3–2.5 mm.

*Female*.—Length about 7.5 mm.; wing 6.5 mm.

Rostrum and palpi black. Antennæ black throughout; flagellar segments elongate, with conspicuous verticils that exceed the segments in length. Head black; anterior vertex relatively wide, exceeding three times the diameter of scape.

Thoracic dorsum black, the surface somewhat polished; pretergites obscure yellow. Pleura black, more pruinose across the ventral pleurites, involving the dorsal sternopleurite, ventral pteropleurite, and meral region; dorso-pleural region darkened. Halteres uniformly blackened.

Legs with the coxæ black, sparsely pruinose; trochanters black; remainder of legs black, the extreme femoral bases obscure yellow, slightly more extensive on the fore femora. Wings more or less bicoloured, the cells beyond cord darker brown than those of proximal half of wing; a more or less distinct, still darker brown band almost crosses the wing, extending from the narrow darker stigma to vein *Cu*; veins brownish black. Venation: *Sc* long, *Sc*<sub>1</sub> ending about opposite mid-length of *R*<sub>2+3+4</sub>, *Sc*<sub>2</sub> about opposite mid-length of the short, straight, oblique *Rs*; *r-m* at fork of *Rs*; *R*<sub>2+3+4</sub> a trifle longer than *R*<sub>2+3</sub>; veins *R*<sub>3</sub> and *R*<sub>4</sub> long, extending generally parallel to one another for much of their lengths; cell 1st *M*<sub>2</sub> relatively small, subequal to vein *M*<sub>4</sub>; *m-cu* at or just before mid-length of cell 1st *M*<sub>2</sub>.

Abdomen, including hypopygium, black, the latter more polished. Ovipositor with the cerci sclerotized and strongly upcurved to the acute tips, blackened basally, the distal half horn-yellow; cerci without setæ, a setiferous nature being common in many allied regional species. Male hypopygium (fig. 8) with the tergal plate, *9t*, large and conspicuous, transversely suboval in outline, the caudal margin with an unbroken row or comb of stout black spinous setæ, these totalling at least fifty, those at ends of the row shorter. Basistyle, *b*, with setæ of outer face long and stout, of mesal surface shorter and more delicate, excepting a group of five or six short stout spines. Dististyles united at proximal ends into a common base, the outer style separated from the basal mass by a distinct pale fracture; outer style, *od*, gradually narrowed outwardly, the lower edge weakly roughened. Inner dististyle, *id*, entirely black, a little shorter than the outer style, at apex split into two spinous points; surface of outer half of style with several coarse erect setæ.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Ayna, La Mar, altitude 2400 metres, May 6, 1941 (*Woytkowski*). *Allotopotype*, ♀, in copula and pinned with a male paratype. *Paratopotypes*, 20 ♂♂, with the types.

From related regional species, including *Gnophomyia* (*Gnophomyia*) *coxitalis* Alexander, of Ecuador; *G.* (*G.*) *dictena* Alexander, of Ecuador; *G.* (*G.*) *kerteszi*ana:

Alexander, of Peru, *G. (G.) mæstitia* Alexander, of Peru, and *G. (G.) pallidapex* Alexander, of Paraguay and south-eastern Brazil, the present fly is most readily told by the distinctive structure of the male hypopygium, especially the distally-forked inner dististyle, in conjunction with the unusually slender outer dististyle.

*Gnophomyia (Gnophomyia) nimbifera*, sp. n.

Allied to *mæstitia*; general coloration opaque black; antennæ, halteres and legs uniformly black; wings with the basal three-fifths more strongly blackened than the distal portion; male hypopygium with the tergal plate large, broader than long, the posterior border gently emarginate and provided with a continuous row of blackened spinous setæ, these totalling at least eighty; basistyle on mesal face with a single modified spinous seta; outer dististyle broad on basal third and here produced into a denticle on mesal face, the margin beyond this point roughened and irregularly toothed; inner dististyle relatively short and stout; ædeagus stout.

*Male*.—Length about 4.5–5.5 mm.; wing 5–6 mm. antenna about 2.3–2.5 mm.

Rostrum and palpi black. Antennæ black throughout, relatively elongate; flagellar segments elongate, sub-cylindrical, the longest verticils exceeding the segments in length. Head dull black; anterior vertex broad, exceeding three times the diameter of scape.

Pronotum brownish black; posterior pretergites and posterior lobe of pronotal scutellum restrictedly yellow. Mesonotum black, the surface opaque by a very sparse pruinosity. Pleura black, the dorsal portion more opaque black, the ventral pleurites more pruinose. Halteres relatively short, black. Legs black throughout, the coxæ slightly pruinose. Wings with a strong blackish tinge, especially the basal three-fifths to shortly beyond the cord, the apex paler; stigma narrow, still darker brown; veins brownish black. Venation: *Rs* arcuated, in direct alignment with *R*<sub>5</sub>, the basal section of the latter lacking or very reduced; cell 1st *M*<sub>2</sub> long and narrow, with *m-cu* at or beyond mid-length.

Abdomen, including hypopygium, black. Male hypopygium (fig. 9) with the tergal plate, 9*t*, large, broader than long, the posterior border very gently emarginate,

densely set with a single or, in part, double row of conspicuous black spinous setæ totalling at least eighty in number. Basistyle, *b*, on mesal face with a single strong modified spinous seta. Outer dististyle, *od*, broad on basal third, the remainder narrowed to the subacute tip, at point of narrowing with a strong spine on mesal edge, the remainder of mesal margin less distinctly toothed or roughened, heavily blackened. Inner dististyle, *id*, relatively short and stout, gently curved, on distal half and along outer margin with conspicuous erect setæ. Ædeagus, *a*, stout, much more so than in *distifurcula*.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Ayna, La Mar, altitude 2400 metres, May 6, 1941 (*Woytkowski*). *Paratopotypes*, 10 ♂♂, with the type.

*Gnophomyia* (*Gnophomyia*) *nimbifera* is most similar to *G. (G.) mæstitia* Alexander, differing most evidently in the structure of the male hypopygium, as the very different dististyles, stouter ædeagus, and other characters. The types of the present fly were taken on the same day as *G. (G.) distifurcula*, sp. n., which is entirely distinct. In the relatively large series of paratypes of the two species it is barely possible that some of the specimens may have been confused, since it was not deemed advisable to make a microscope mount of every male specimen. In *distifurcula*, the chief darkening of the wing is more restricted to a broad band at the cord rather than occurring over more than the proximal half of the wing, as in the present fly.

*Gnophomyia* (*Gnophomyia*) *oxymera*, sp. n.

General coloration of mesonotum dark brown, the præscutum with four stripes; halteres dark brown; wings with a very weak brown tinge, stigma narrow and very indistinct, pale brown; *r-m* before fork of *Rs*; male hypopygium with both dististyles blackened, the outer one acutely pointed at apex; gonapophyses appearing as flattened plates that terminate in slender blackened spines.

*Male*.—Length about 6 mm.; wing 6.2 mm.

Rostrum dark brown, palpi black. Antennæ black throughout; flagellar segments elongate, subcylindrical.

to long-oval; longest verticils subequal in length to the segments. Head grey; anterior vertex very narrow, about equal in breadth to the diameter of the scape; eyes large.

Pronotum brown; sides of scutellum and the pretergites very light yellow. Mesonotal præscutum chiefly covered by four dark brown stripes, the interspaces sparsely pruinose; humeral and lateral portions a trifle more brightened; posterior sclerites of notum dark brown, sparsely pruinose. Pleura and pleurotergite obscure yellow, the anepisternum more or less darkened. Halteres dark brown, the base of stem restrictedly pale. Legs with the coxæ and trochanters pale yellow; remainder of legs light brown, the femoral tips a trifle darker, the outer tarsal segments blackened. Wings with a very weak brown tinge, the prearcular field a trifle more brightened, including the veins; stigma pale brown, narrow and very indistinct; veins brown. Venation:  $Sc_1$  ending beyond mid-length of  $R_{2+3+4}$ ,  $Sc_2$  some distance from its tip, about opposite the fork of  $Rs$ ,  $Sc_1$  consequently long;  $r-m$  before the fork of  $Rs$ , the distal section of the latter about one-third  $r-m$ ;  $m-cu$  about its own length beyond the fork of  $M$ ; cell 1st  $M_2$  narrow, subequal to vein  $M_4$  beyond it.

Abdominal tergites dark brown; basal sternites yellow, succeeding segments brown; hypopygium somewhat paler brown than the remainder of tergites. Male hypopygium (fig. 10) with both dististyles blackened, the outer style, *od*, broad on basal third, thence narrowed, the slender acute tip decurved; inner dististyle, *id*, about two-fifths as long; some of the setæ on outer face of basistyle near apex unusually long, almost equalling in length the outer dististyle. Gonapophyses, *g*, appearing as broad-based flattened plates that narrow into acute black spines, one on either side of the ædeagus, *a*, and phallosomic plate.

*Hab.* Peru (Ayacucho).

*Holotype*, ♂, Ayna, La Mar, altitude 2400 metres, May 26, 1941 (*Woytkowski*).

In its general appearance, *Gnophomyia* (*Gnophomyia*) *oxymera* is much like several other regional members of the subgenus, especially *G.* (*G.*) *porteri* Alexander, but differs conspicuously from all such species in the structure

of the male hypopygium, especially the outer dististyle and gonapophyses.

*Gnophomyia (Gnophomyia) longitergata*, sp. n.

Size large (wing, male, over 7.5 mm.); general coloration black, including the antennæ, halteres and legs; ventral thoracic pleura with a microscopic grey pruinosity; wings with a strong blackish tinge, the stigma darker and unusually narrow; *r-m* beyond the fork of *Rs* on *R*<sub>5</sub>; male hypopygium with the median region of tergite strongly produced into a flattened lobe that is deeply notched at apex; basistyle unusually short and stout; inner dististyle short.

*Male*.—Length about 7.5 mm.; wing 7.8 mm.; antenna about 2.1 mm.

Rostrum and palpi black. Antennæ black throughout, relatively long; flagellar segments subcylindrical, a little shorter than the longest verticils; outer segments gradually shorter. Head black.

Pronotum black, sparsely pruinose, the margin of the scutellum obscure yellow. Mesonotum uniformly black, the surface subnitidous, sparsely pruinose, more heavily so on scutellum. Pleura black, the dorsopleural membrane and dorsal pleurites, including the pleurotergite, glabrous; ventral pleurites, including sternopleurite, ventral pteropleurite and meron, with a microscopic grey pubescence to produce a pruinose appearance. Halteres black. Legs with the coxæ black, grey pruinose; trochanters black; remainder of legs black, the extreme bases of fore femora restrictedly obscure yellow. Wings with a strong blackish tinge, the unusually long and narrow stigma still darker in colour; stigma occupying cell *Sc*<sub>1</sub> and as a narrow margin behind vein *R*<sub>1+2</sub>, not reaching vein *R*<sub>3</sub>; veins brownish black. Venation *Sc*<sub>1</sub> ending nearly opposite the fork of *R*<sub>2+3+4</sub>, *Sc*<sub>2</sub> some distance from its tip, about opposite the fork of *Rs*; *r-m* just beyond the fork of *Rs* on *R*<sub>5</sub>; cell 1st *M*<sub>2</sub> relatively narrow, shorter than any of the veins beyond it; *m-cu* about one-third its length beyond the fork of *M* cell 2nd *A* wide, especially near mid-length.

Abdomen, including hypopygium, black. Male hypopygium (fig. 11) with the median region of tergite, 9t, produced caudad into a long-rectangular plate, the apex

of which is deeply emarginate, the notch wider than either lateral lobe. Basistyle, *b*, unusually short and stout. Inner dististyle, *id*, with the portion beyond the basal fracture very short ; outer style long, glabrous.

*Hab.* Peru (Junin).

*Holotype*, ♂, Tulumayo Valley, Tarma, altitude 4000–8000 ft., November 8, 1940 (*Woytkowski*).

*Gnophomyia* (*Gnophomyia*) *longitergata* is readily told from other similar black species of the subgenus that have uniformly blackened antennæ, halteres and legs, by the large size and by details of structure of the male hypopygium, especially the long-produced, emarginate median lobe of the tergite.