

## NEW SPECIES OF CRANE-FLIES FROM SOUTH AMERICA. PART I.

(Family Tipulidæ, Order Diptera).

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The majority of the species described at this time are from Santa Barbara and Villarica, Paraguay, where they were collected by my friend, Mr. F. Schade. Other specimens discussed at this time are from *Argentina*, collected by Dr. Carlos Bruch and Dr. Alexander Wetmore; *Colombia*, included in collections sent for naming by Mr. C. Howard Curran; *Ecuador*, taken by Mr. G. H. H. Tate; *Paraguay*, taken by Fiebrig, contained in the Vienna Museum and kindly sent to me for study by the Custodian of the Diptera, Dr. Hans Zerny; *Peru*, collected by Parish and by von Winthem, the latter specimens likewise included in the old collections of the Vienna Museum; *Venezuela*, collected by E. B. and J. H. Williamson and W. H. Ditzler. I express my sincere thanks to all of the above-named gentlemen for this cooperation in making known the vast Tipulid fauna of the Neotropical Region. Except where stated to the contrary, the types are preserved in the writer's collection.

A considerable proportion of the species are from Santa Barbara, Paraguay. I am indebted to Mr. Schade for the following notes concerning this locality:

"The best area for collecting hereabouts is undoubtedly that of Santa Barbara, 20 kilos. northeast of Villarica, just where the virgin forest begins to extend via Couyuasu up to the Parana River vis-a-vis the Iyuaru Rapids. The country is moderately hilly and about 300 meters high. It is mostly virgin forest, with large and small rivers. The country is alluvial and diluvial, respectively, and only in the north granite is found."—*F. Schade*.

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\* Contribution from the Department of Entomology, Massachusetts Agricultural College.

**Helius** St. Fargeau.**Helius (Helius) pallidipes** sp. n.

Head dark brownish gray, the vertex with a darker mark; mesonotum brown, the pleura darker; femora pale brownish yellow, tibiae and basitarsi china-white; wings grayish yellow with a brown clouded pattern at apex and in the anal angle; abdomen brownish black.

*Male*—Length, 6.5–7 mm.; wing, 6–6.5 mm. *Female*—Length, 6.5 mm.; wing, 5.8 mm.

Rostrum about as long as the remainder of the head, dark brown. Antennæ short, dark brown throughout; flagellar segments oval, becoming gradually smaller outwardly, clothed with a dense erect white pubescence. Head dark brownish gray, the narrowed vertex paler, with a triangular darker brown spot just behind the narrowed portion.

Pronotum and pleura sooty brown. Mesonotum rather bright brown, the praescutum darker medially; scutellum and postnotal mediotergite darker brown. Pleura brown, darker sooty brown dorsally, the surface sparsely pruinose. Halteres pale yellow, the knobs a trifle darker. Legs with the coxæ and trochanters obscure yellow, the fore coxæ darker; femora pale brownish yellow; tibiae china-white, the extreme base and the extreme apex a trifle darkened; basitarsi china-white, their apices and the remaining tarsal segments dark brown. Wings with a grayish yellow suffusion, the costal region clearer yellow; stigma short-oval, brown; conspicuous brown clouds occupy the wing-apex, the anal angle in cells *Cu*, *1st A* and *2nd A*, and as less distinct seams along vein *M* and its branches; veins dark brown, *C*, *Sc*, *R*, the bases of *M* and *Rs*, and the tips of  $R_{2+3}$  and the Anal veins yellow. Venation: *Sc* ending about opposite midlength of *Rs*,  $Sc_2$  not far from its tip;  $R_{2+3}$  gently sinuous, cell  $R_1$  being narrowed at outer end; inner end of cell *1st M*<sub>2</sub> lying far before the level of the anterior cord, *r-m* being beyond midlength of the cell; *m-cu* shortly beyond the fork of *M*.

Abdomen brownish black, including the hypopygium.

*Habitat*: Paraguay. Holotype, ♂, Santa Barbara, October 10, 1924 (F. Schade). Allotopotype, ♀; paratopotype, ♂.

**Helius (Helius) larotypha** sp. n.

General coloration pale brownish yellow, the praescutum infuscated medially; thoracic pleura with a dark girdle; femora with the tips conspicuously infuscated; wings pale yellow, with a sparse handsome brown pattern; abdominal sternites yellow, each with a conspicuous transverse black band at base.

*Male*—Length, 6.5 mm.; wing, 5.8 mm. *Female*—Length, 7 mm.; wing, 6.8 mm.

Rostrum about one-third longer than the remainder of the head, dark brown, paler brown beneath; palpi dark brown. Antennæ about one-half longer than the rostrum, brownish black throughout. Head gray, the orbital region lighter gray.

Pronotum pale yellow, with a narrow dark brown median vitta. Mesonotal praescutum pale brownish yellow, the median area infuscated; scutum and scutellum brownish testaceous, the lateral portions of the scutal lobes dark brown; postnotal mediotergite darker brown, sparsely pruinose. Pleura reddish yellow, the propleura clearer yellow; a conspicuous dark brown transverse girdle on the anepisternum and sternopleurite. Halteres yellow. Legs with the coxæ and trochanters pale yellow; femora yellow, more obscurely so outwardly, the tips narrowly but conspicuously infuscated; tibiæ testaceous yellow, the tips weakly infuscated; tarsi passing into dark brown at tips. Wings with a pale yellow suffusion, the costal region clearer yellow; a sparse but well-defined brown pattern, distributed as follows: The stigmal spot connected with a broad seam on the anterior cord; posterior cord and outer end of cell 1st  $M_2$  conspicuously seamed; small but very distinct brown spots at origin of  $R_s$  and tip of  $R_{2+3}$ ; a brown cloud at end of vein  $Cu_1$ , crossing cell  $M_4$ ; a brown cloud at one-third the length of cell  $Cu$ ; wing-tip narrowly infumed; veins pale yellow, darker in the infuscated areas. Venation:  $Sc$  long,  $Sc_2$  ending about opposite two-thirds  $R_s$ ,  $Sc_2$  not far from its tip;  $R_s$  weakly angulated at origin;  $R_{2+3}$  sinuous, cell  $R_3$  at margin being very wide; inner end of cell 1st  $M_2$  lying far before the level of the anterior cord,  $r-m$  being beyond mid-length of the cell;  $m-cu$  close to the fork of  $M$ .

Abdominal tergites yellow; sternites shiny yellow, each with a narrow but conspicuous transverse black band just beyond the base; eighth sternite largely shiny coal-black, the apex yellow; hypopygium yellow. In the female, the tergites are reddish brown with the apices of the individual segments darker brown, a curious reversal of the pattern of the sternites.

*Habitat*: Paraguay. Holotype, ♂, Santa Barbara, November 12, 1924 (F. Schade). Allotype, ♀, Molinas que, Department of Caragu, November 15, 1925 (F. Schade).

### Orimarga Osten Sacken.

#### Orimarga excessiva sp. n.

Related to *O. pallidibasis* Alexander (Peru), differing in the coloration of the body and wings and the details of venation.

*Female*—Length, 7.3 mm.; wing, 6.5 mm.

Rostrum and palpi brownish black. Antennæ with the first scapal segment black, the second a little paler; flagellum broken. Head dark gray.

Pronotum black, dusted with gray. Mesonotum dark reddish brown, the humeral region of the praescutum a little brighter, the lateral margins of the praescutum light gray pruinose; postnotum paler. Pleura with the dorsal sclerites dark brown, the ventral sclerites and mesosternum reddish brown. Halteres broken. Legs with the coxæ and trochanters obscure yellow, the latter with a black marginal

ooth; remainder of legs broken. Wings grayish subhyaline; veins brown. Venation:  $Sc_1$  ending about opposite two-thirds the length of  $R_s$ ,  $Sc_2$  at its tip;  $R_s$  moderately long, strongly arcuated at origin; far from the tip of  $R_1$ , the distal section of  $R_1$  being longer than the first section of  $R_{2+3}$  and subequal to the distance between  $Sc_2$  and  $r$ ;  $-m$  equal to the deflection of  $R_{4+5}$ , much longer than the basal deflection of  $M_{1+2}$ ;  $m-cu$  about one and one-half times its length before the fork of  $M$ .

Abdomen with the tergites dark brown, the sternites obscure yellow. Ovipositor with the slender tergal valves acute, strongly upcurved; sternal valves much longer and more powerful, compressed, their tips obtuse.

*Habitat*: Venezuela. Holotype, ♀, Tachira, Tachira, April 1, 1920 (E. B. and J. H. Williamson and W. H. Ditzler).

### Polymera Wiedemann.

#### Polymera (Polymera) regina sp. n.

Size very large (wing over 8 mm.); general coloration coal-black; antennæ uniformly blackened; posterior tarsi pale; wings with a brown tinge, the disk and anal angle with paler washes; cell  $M_1$  lacking; abdominal sternites dimidiate yellow and black.

*Male*—Length, about 7.5–8 mm.; wing, 8.4–8.5 mm.; antenna, about 13.5–14 mm. *Female*—Length, 8.5–9.5 mm.; wing, 9.2–9.5 mm.; antenna, 3–3.5 mm.

Rostrum and palpi brownish black. Antennæ (♂) elongate, uniformly blackened; flagellar segments scarcely constricted to weakly quadri-nodose, each segment with about four whorls of very long richiæ, this arrangement more confused on the outermost segments. Antennæ (♀) short and simple. Head black, very sparsely pruinose.

Mesonotum shiny coal-black, the pleura concolorous but heavily pruinose. Halteres relatively short, brown, the base of the stem strictly brightened, the knobs blackened. Legs with the coxæ brown, the bases extensively blackened and sparsely pruinose; trochanters brown, darker apically; femora brown, passing into black; tibiæ black; tarsi dark brown, segments two to four of the posterior tarsi dirty brownish white. Wings with a brown tinge, darker in the costal and stigmal regions and along vein  $Cu$ ; a dusky seam at the fork of  $R_s$ ; paler washes in the radial field and in the bases of the Anal cells; veins dark brown. Venation:  $R_s$  relatively short and straight;  $r$  on  $R_2$  at about three-fifths the length; ultimate section of  $R_1$ , from one-third to one-fifth the length of the penultimate; cell  $M_1$  lacking.

Abdominal tergites shiny blue-black, the extreme lateral portions paler; sternites conspicuously dimidiate, the segments being obscure yellow at base, the apical half abruptly blackened; terminal segments and hypopygium uniformly blackened. Ovipositor with the valves elongate, gently upcurved; bases of the valves fulvous.

*Habitat:* Paraguay. Holotype, ♂, Santa Barbara, October 10, 1924 (F. Schade). Allotopotype, ♀. Paratopotypes, 3 ♂♂, 3 ♀♀.

*Polymera regina* is the largest and most distinct species of the genus yet discovered. In the lack of cell  $M_1$  it agrees only with *P. pleuralis* Alexander (Brazil), a very different fly.

***Polymera (Polymera) subsuperba* sp. n.**

*Male*—Length, 6.2–6.5 mm.; wing, 5.8–6 mm.; antenna, about 7.5–8.5 mm.

Generally similar to *P. (P.) superba* Alexander (Panama to Paraguay), differing especially in the darker coloration of the body and wings and in the pattern of the legs.

Head shiny reddish, the sides of the vertex behind more blackened. Antennæ as in *P. superba*.

Mesonotum black, the humeral region of the praescutum reddish brown. In some specimens, the entire cephalic portion of the praescutum is uniformly brightened, as in *P. superba*. Halteres uniformly darkened; femora obscure yellow, darkened at the outer end, this area including a narrow, obscure yellow subterminal ring, preceded by a similar dark annulus. In some cases, the distal half of the femur is darkened rendering the yellow annulus even more distinct; fore femora not differently colored from the other femora; all tibiæ brownish black; fore and middle tarsi brownish black, posterior tarsi yellowish brown with golden yellow setæ. In one paratype, both the middle and posterior tarsi are more conspicuously whitened. Wings very heavily suffused with dark brown, the white pattern reduced to mere scattered spots and dots as follows: In cell 1st  $R_1$ , before  $r$  and in cell  $R_2$  immediately behind it; across  $R_s$  in the basal portion of cell 1st  $R_1$  and the outer end of cell  $R$ ; spots in the bases of cells  $R_3$ ,  $R_5$ ,  $M_2$  and  $M_4$ ; a larger area in the outer end of cell  $M$ ; vague pale dots in the outer ends of cells  $Cu$  and 1st  $A$ . In some cases, the pattern, as above described, is even more reduced.

Abdomen almost uniformly blackened, including the hypopygium.

*Habitat:* Paraguay. Holotype, ♂, Villarica, February 18, 1925 (F. Schade). Paratopotypes, ♂, January 18, 1925; ♂, January 19, 1925; ♂, November 1, 1923; ♂, December 17, 1924 (F. Schade).

***Polymera (Polymera) cinereipennis* sp. n.**

*Male*—Length, 6–6.2 mm.; wing, 6.8–7 mm.; antenna, about 8–8.5 mm.

Most closely related to the smaller *P. (P.) thoracica* Alexander (Brazil), to which species it runs by means of the author's key to the genus (Proc. U. S. Nat. Mus., 44: 527–528; 1913). The two species

belong to a section in which the femoral tips are not abruptly paler, the tips of the tibiæ are conspicuously infuscated to blackened, all the tarsi are whitened, the entire thoracic pleura and sternum blackened and the wings uniformly cinereous.

Antennæ elongate, the individual segments distinctly bi-nodose, dark brown, with the tips of the segments narrowly paler to produce an ill-defined annulated appearance.

The entire mesonotum is dark, the praescutal interspaces with a sparse yellow pollen, the usual stripes slightly darker. Pleura, including the sternopleurite, uniformly brownish black. Legs with the coxæ dark brown, their apices, especially of the middle and hind coxæ a trifle paler; trochanters brownish testaceous; femora pale brown, more obscure yellowish brown basally, becoming more intense outwardly to produce a slightly darker subterminal ring, the tips beyond a trifle paler than this ring but not whitened; tibiæ pale brown, the tips narrowly but conspicuously blackened; tarsi of all legs pale, almost white, the basitarsi of the fore and middle legs a trifle infumed. Wings with a uniform gray tinge; veins darker. Venation:  $Sc$  ending about opposite midlength of the long  $R_{2+3}$ , the latter varying from two-thirds to subequal to the basal section of  $R_2$ ; ultimate section of  $R_1$  varying from about one-half to one-fourth the penultimate section.

Abdominal tergites brownish black, the sternites dark brown, blackened laterally; hypopygium brownish black.

*Habitat:* Paraguay. Holotype, ♂, Villarica, February 18, 1925 (F. Schade). Paratopotypes, ♂, February 22, 1925; ♂, May 25, 1925; ♂, June 8, 1924; ♂, October 26, 1923 (F. Schade).

***Polymera (Polymera) albogeniculata* sp. n.**

*Female*—Length, about 6 mm.; wing, 6.8 mm.

Most closely related to *P. (P.) albitarsis* Williston (Lesser Antilles), to which species it runs by means of the author's key to the species of the genus, cited above. The pattern of the femora suggests *P. (P.) geniculata* Alexander (Porto Rico), which is, in all other regards, a very different fly.

Rostrum dark brown. Antennæ with the basal segment brownish black; second segment pale brown; flagellar segments almost uniformly dark brown, the extreme base of the proximal segments very vaguely paler. Antennæ relatively elongate for this sex, if bent backward extending about to the third abdominal segment.

Mesonotal praescutum reddish brown with four darker brown stripes; scutal lobes extensively darkened. Pleura almost covered by a broad brownish black longitudinal stripe that extends to the base of the abdomen; sternopleurite dark, with a microscopic silvery pubescence. Halteres brown, the base of the stem paler. Legs with the coxæ and trochanters pale yellow, the fore coxæ with the proximal half dark brown; femora brown, becoming darker outwardly, the tips narrowly but abruptly whitened; tibiæ brown, the tips narrowly paler;

fore and middle basitarsi a little darkened, the tips passing into yellowish white; posterior basitarsi and all the remaining tarsal segments of all the legs, with the exception of the darkened last segment, yellowish white. Wings with a uniformly pale brown tinge; veins darker brown. Venation:  $R_{2+3}$  about two-thirds the length of the basal section of  $R_2$ ;  $r$  retreated from the tip of  $R_1$ , to a distance exceeding three times its length.

Abdomen dark brown, including the sternites.

*Habitat:* Ecuador. Holotype, ♀, Pallatanga, altitude 4400 feet, March 26, 1922 (G. H. H. Tate).

***Polymera (Polymera) bruchi* sp. n.**

*Male*—Length, about 6 mm.; wing, 7.5 mm.; antenna, about 8.5 mm.

Most closely related to *P. (P.) tibialis* Alexander (Brazil) in the general coloration of the body and wings and in the short  $R_{2+3}$ , differing in the following regards:

Antennæ shorter, the nodes of the individual segments closer together; bicolorous appearance of the flagellum even more distinct, the segments being very dark brown to brownish black, with the proximal end narrowly, the distal end more broadly, light yellow. Head brown, the center of the vertex extensively blackened.

Mesonotum light reddish brown, the praescutum with four darker brown stripes, the scutal lobes, center of the scutellum and basal median area of the postnotal mediotergite darkened. Pleura yellow, with a conspicuous black stripe that extends to the base of the abdomen, the ground-color being restricted to the sternopleurite. Legs with the fore coxæ pale yellow, the basal half dark brown; remainder of the coxæ and trochanters yellow; only a single (posterior) leg remains; femora obscure yellow, passing into brown outwardly, the tips narrowly and abruptly whitened; tibiæ brown, the tips narrowly whitened; basitarsi brown, the distal fifth passing into white; second tarsal segment white; remainder of tarsi broken. Wings with a strong brownish tinge, the cord narrowly seamed with darker brown to produce a darker discal area; most of the cells of the wing near the cord show paler central streaks. Venation:  $Sc$  relatively short,  $Sc_1$  ending just before the fork of  $R_{2+3}$ ,  $Sc_2$  close to its tip, exceeding  $Sc_1$  in length;  $R_{2+3}$ , very short, about as long as  $m-cu$ ;  $r$  faint, placed on  $R_2$  close to or just beyond midlength of the vein; ultimate section of vein  $R_1$  a little more than one-half the penultimate section; anterior arculus lacking.

Abdominal tergites blackened, the sternites brownish yellow, narrowly blackened laterally; tip of abdomen broken.

*Habitat:* Argentina. Holotype, ♂, Palo Blanco, La Plata, November 20, 1920 (C. Bruch).

This interesting *Polymera* is named in honor of my friend, Dr. Carlos Bruch, to whom, and to the late Engineer Vladimir Weiser, the great advance in our knowledge of the Tipulidæ of Argentina is due.

***Limnophila* Macquart.**

***Limnophila schadei* sp. n.**

Allied to *L. subfuscata* Alexander (Argentina); wings with numerous small dots and spots in all the cells, those in the radial field especially distinct and clearly defined.

*Female*—Length, 11–12 mm.; wing, 8.5–9 mm.

Rostrum and palpi dark brown. Antennæ with the elongate basal segment of the scape dark brown, faintly pruinose; second segment brownish yellow; basal segments of flagellum yellow, the outer segments becoming more bicolorous, the base of the individual segments being darker than the apex; flagellar segments elongate-oval. Head gray, indistinctly variegated with brown; head broadly prolonged behind.

Pronotum gray, with a median brown line and smaller brown dots. Mesonotal praescutum brownish gray with a median brown stripe that is indistinctly bisected anteriorly by a capillary dark brown vitta, the interspaces conspicuously spotted with brown; lateral stripes vaguely indicated, dark gray; lateral margins of praescutum buffy; scutum brown, the center of each lobe with a conspicuous dark brown mark; median area of scutum and scutellum brown; scutellum and postnotum dark gray, the posterior margin of the mediotergite of the latter with two large confluent dark brown spots. Pleura light buffy brown with a conspicuous dark brown dorsal longitudinal stripe, the ventral pleurites spotted with brown. Halteres buffy, the knobs dark brown. Legs with the coxæ relatively pale, pollinose, spotted with darker brown; trochanters brown; femora yellow, the tips conspicuously dark brown; tibiæ pale yellow, the base and apex faintly darkened; basal three segments of tarsi yellow, the tips narrowly darkened; terminal tarsal segments brown. Wings with a buffy tinge, with four larger brown spots and numerous small spots and dots in all the cells; the brown spots at origin of  $R_s$  and in cell  $R$  before this origin have the centers pale; the stigmal blotch extends obliquely from the tip of  $R_1$  to  $r-m$ ; the fourth area occupies the tip of  $R_2$ ; the dots in the radial cells are clearer-cut than those in the posterior cells where they become paler, larger and ill-delimited; posterior cord,  $m$  and the fork of  $M_{1+2}$  with somewhat larger spots; a conspicuous pale streak in cell  $R$ , crossing cell  $1st M_2$  into cell  $M_4$ ; veins brown. Venation:  $Sc_1$  ending just beyond the fork of  $R_s$ ,  $Sc_2$  some distance from its tip,  $Sc_1$  alone being longer than  $m-cu$ ;  $R_s$  long;  $R_{2+3}$  very short, less than  $r$  which is one and one-half times its length beyond the origin of  $R_2$  and about two and one-half times its length from the tip of  $R_1$ ; cell  $1st M_2$  relatively small,  $m-cu$  about one-third its length beyond the fork of  $M$ ; cell  $M_1$  a trifle shorter than its petiole; anterior arculus present.

Abdomen elongate, reddish brown; tergites with a conspicuous continuous dark brown median stripe, the lateral margins with abundant brown setigerous punctures; sternites similar with a basal lateral and posterior median brown spot on each segment, the remaining

surface with conspicuous setigerous punctures. Ovipositor with elongate valves, the ventral pair blackened, the tergal valves longer, horn-colored.

*Habitat:* Paraguay. Holotype, ♀, Villarica, November 1, 1923 (F. Schade). *Paratopotypes*, ♀, September 24, 1924; ♀, October 19, 1923 (F. Schade).

*Limnophila schadei* is named in honor of my friend, Mr. F. Schade, who has added greatly to our knowledge of the natural history of Paraguay.

***Limnophila angustilineata* sp. n.**

*Female*—Length, about 8.5 mm.; wing, 7.7 mm.

Most closely related to *L. kerteszi* Alexander (Brazil), differing in the following regards:

Head light gray, with a brown spot on either side of the vertex immediately behind the narrowest point.

Pronotum and mesonotal praescutum pale brown with a single continuous narrow dark brown stripe that ends in a long tenuous point just before the suture. Legs with the femora relatively dark brown. Wings with the ground-color whitish, the brown pattern about as in *kerteszi* but more restricted; costal region not conspicuously darkened; stigmal area restricted, not confluent with the seam on the anterior cord; the dark apex of cell  $R_2$  is restricted to a small oval spot, with another, slightly smaller spot below it in cell  $R_3$ . Venation:  $Sc_2$  shorter than  $Sc_1$ ;  $r$  indistinct, close to the extreme tip of  $R_1$ ;  $m-cu$  beyond mid-length of the long cell  $1st M_2$ ; anterior arculus preserved.

Abdomen dark-colored, the sternites not bicolorous.

*Habitat:* Paraguay. Holotype, ♀, Villarica, June 20, 1925 (F. Schade).

***Pilaria Sintenis.***

***Pilaria lathraea* sp. n.**

General coloration brown, the praescutum with a dark brown median line; pleura striped longitudinally with pale; wings creamy-white, with a sparse brown pattern; cell  $1st M_2$  very elongate, longer than any of the veins beyond it; cell  $M_1$  lacking.

*Female*—Length, about 6 mm.; wing, 6.8 mm.

Rostrum dark, sparsely pruinose; palpi black. Antennæ of moderate length, if bent backward extending nearly to the wing-root; basal segment elongate, dark-colored, pruinose; flagellar segments pale yellowish brown, the outer segments darker; flagellar segments short-oval; verticils much exceeding the segments. Head dark, gray pruinose, the anterior vertex light silvery.

Pronotum brown, massive. Mesonotal praescutum brown, paler and brighter laterally, with a conspicuous dark brown median line, the remaining surface of the sclerite with a sparse silvery pruinosity;

tuberculate pits lacking; pseudosutural foveæ very reduced; scutal lobes dark brown, the posterior lateral callosities obscure yellow; scutellum yellow testaceous; postnotum pale brown, sparsely pruinose. Pleura dark brown, with a conspicuous paler longitudinal area crossing the dorsal sternopleurite and meron; dorso-pleural membrane pale. Halteres relatively long and slender, pale yellow. Legs with the coxæ pale brownish yellow; trochanters yellow; remainder of legs brownish yellow, the terminal tarsal segments passing into darker. Wings creamy-white, with a sparse brown spotted pattern, distributed as follows: At arculus; origin of  $R_s$ ;  $Sc_2$ ; a larger oval stigma; narrow seams along the cord and outer end of cell  $1st M_2$ ; marginal spots at ends of veins  $R_2$  and  $R_3$ ; veins pale, darker in the infuscated areas. Venation:  $R_s$  relatively short,  $Sc_1$  ending at about two-thirds the length of the long  $R_s$ ,  $Sc_2$  a little more than its length from the tip;  $R_s$  angulated at origin, in alignment with  $R_{2+3}$ , the latter nearly one-half longer than the basal deflection of  $R_{4+5}$ ;  $r$  at the fork of  $R_{2+3}$  and a little more than its own length from the tip of  $R_1$ ;  $R_2$  relatively short, weakly sinuous, cell  $R_2$  at wing-margin very wide; inner ends of cells  $R_3$ ,  $R_5$  and  $1st M_2$  in oblique alignment, the former more distad; cell  $1st M_2$  very long and narrow, about one-half longer than the longest vein ( $M_{1+2}$ ) issuing from it;  $m$  short, straight, much shorter than the arcuated outer deflection of  $M_3$ ; cell  $M_1$  lacking;  $m-cu$  oblique, at about or less than its own length beyond the fork of  $M$ ; distal section of  $Cu_1$  about one-third to one-half longer than  $m-cu$ ; anterior arculus preserved.

Abdominal tergites dark brown, the sternites yellow. Ovipositor with the tergal valves long and slender, gently upcurved.

*Habitat:* Colombia. Holotype, ♀, Cincinnati, San Lorenzo Mt., at light, December 13, 1922.

Type returned to Mr. Curran.

***Rhabdomastix* Skuse.**

***Rhabdomastix (Rhabdomastix) peruviana* sp. n.**

Related to *R. (R.) septemtrionis* Alexander (Central America); wings narrow; veins  $R_1$  and  $R_2$  widely separated at wing-margin.

*Male*—Length, about 5 mm.; wing, 6.7 mm.; antenna, 15 mm.

Rostrum and palpi brown. Antennæ elongate, pale brownish yellow, the incisures a little darker; first scapal segment very large. Head brown, the anterior part of the vertex, the orbits and the genæ yellow; vertex broad.

Mesonotum brown, sparsely pollinose; antero-lateral margin of praescutum narrowly yellowish. Pleura brown. Halteres pale. Legs with the coxæ brown; trochanters very long, exceeding the coxæ, yellow; femora yellow, the tips darker; tibiæ and tarsi pale brown. Wings subhyaline; stigma pale brown, elongate, lying basad of  $R_2$ ; veins pale brown. Venation:  $Sc_1$  ending opposite three-fourths the length of  $R_s$ ,  $Sc_2$  subobsolete;  $R_2$  oblique, widely remote from  $R_1$  at wing-margin, the distance about twice  $R_2$  alone; cell  $1st M_2$  roughly oval; veins

issuing from cell *1st M*<sub>2</sub> much longer and less divergent than in *septemtrionis*. Wings much narrower than in *septemtrionis*.

Abdomen dark brown, the caudal margins of the individual tergites very narrowly pale.

*Habitat*: Peru. Holotype, ♂, Lima, April, 1840 (von Winthem).

Type in the Collection of the Vienna Museum.

**Gonomyia (Progonomyia) ominosa** sp. n.

General coloration brownish gray, the praescutum with four darker brown stripes; thoracic pleura conspicuously variegated with china-white; wings with a faint brownish tinge, the stigma darker; male hypopygium with the mesal lobe of the basistyle conspicuously produced, provided with retrorse setæ; both dististyles entirely blackened, the inner one near midlength dilated into a collar and here armed with a short straight spine.

*Male*—Length, about 6.8 mm.; wing, 6.8–7 mm. *Female*—Length, about 7.5 mm.; wing, 7.4–7.5 mm.

Rostrum and palpi dark brown. Antennæ dark brown throughout, relatively long, in the male, if bent backward, extending nearly to the wing-root; in the female, a very little shorter; flagellar segments elongate-fusiform to subcylindrical. Head gray.

Pronotum obscure yellow, the center of the disk brown, pruinose; lateral pretergites narrow, pale yellow. Mesonotal praescutum dark brownish gray, with four darker brown stripes, the intermediate pair separated by a distance less than the diameter of one; scutal lobes darker than the ground-color; scutellum reddish brown; postnotum blackened, sparsely pruinose. Pleura blackened, pruinose, variegated with china-white, the latter including an obliquely longitudinal stripe crossing the sternopleurite onto the pteropleurite and meron; postnotal pleurotergite with a large oval pale spot. Halteres yellow, the knobs darker brown. Legs with the coxæ darkened on basal half or more, the apices pale; trochanters yellowish testaceous; femora light brown; tibiae and tarsi darker brown. Wings with a faint brownish tinge, the small oval stigma darker brown; veins dark brown. Venation: *Sc*<sub>1</sub> ending just beyond midlength of *Rs*, *Sc*<sub>1</sub> variable in length, ranging from shorter to considerably longer than the basal deflection of *R*<sub>4+5</sub>; *r* on *R*<sub>2+3</sub> shortly before its fork; *m-cu* close to the fork of *M*.

Abdomen dark brown, the sternites more pruinose. Male hypopygium with the outer apical angles of the basistyle a little produced but obtuse, here blackened and provided with powerful setæ; mesal apical angle produced into a long, dark colored, flattened clavate lobe, the mesal face of which is provided with numerous retrorse setæ. Dististyles two, both entirely blackened, the inner dilated into a collar at midlength and here provided with a strong straight spine that is directed transversely across the axis of the style, the apex beyond the dilated portion long and nearly straight. Outer dististyle a long,

strongly curved blackened cylindrical rod, the tip suddenly acute. Aedeagus long, the narrowed apex subtended on either side by a setiferous shoulder-like lobe, to give the organ a somewhat trifold appearance.

*Habitat*: Paraguay. Holotype, ♂, Santa Barbara, November 12, 1924 (F. Schade). Allotopotype, ♀, pinned with the type. Paratypes, ♂, Villarica, September 22, 1925; ♂, September 22, 1925; ♂, September 23, 1925; ♂, October 19, 1923; ♀, October 18, 1924; ♀, March 9, 1925 (F. Shade).

**Gonomyia (Progonomyia) eriopteroides** sp. n.

General coloration reddish brown, variegated with white; wings strongly suffused with brownish yellow; male hypopygium with both dististyles small and pale.

*Male*—Length, about 4.5 mm.; wing, 5 mm.

Rostrum and palpi brownish black. Antennæ with the scapal segments light yellow, the flagellum dark brown; basal flagellar segments enlarged, the outer ones passing into fusiform, the segments with long verticils. Head white, the sides of the vertex behind darker.

Pronotum and lateral pretergites white. Mesonotal praescutum reddish brown, the median area slightly pruinose, the sublateral portions a little darker, the lateral margins of the sclerite broadly whitened; pseudosutural foveæ large; scutum dark, the posterior lateral callosities yellow; scutellum a little brighter than the scutal lobes. Pleura pale, the propleura with a dark brown spot; mesopleura with two longitudinal reddish brown stripes, the more dorsal a little darker colored, extending to the postnotum, the more ventral one occupying the sternopleurite. Halteres dark brown. Legs with the coxæ and trochanters yellow; remainder of legs yellow, the tips of the basitarsi and remaining tarsal segments dark brown. Wings with a strong brownish yellow tinge, the costal region clearer yellow; veins yellow. Venation: *Sc*<sub>1</sub> ending just before the fork of *Rs*, *Sc*<sub>2</sub> some distance from its tip, *Sc*<sub>1</sub> alone longer than *m-cu*; *r* on *R*<sub>2+3</sub> at near mid-length and on *R*<sub>1</sub> about one and one-half times its own length from the tip; cell *M*<sub>2</sub> about twice as deep as its petiole; *m-cu* about its own length beyond the fork of *M*.

Abdominal tergites pale brown, the sternites yellow; hypopygium yellow. Male hypopygium small; basistyles with the outer apical angle conspicuously produced to a conical fleshy point; mesal lobe relatively small and inconspicuous, setiferous; mesal face of basistyle microscopically roughened. Outer dististyle a long, slender, pale blade that gradually narrows to the sub-acute tip; inner dististyle a strongly curved cultriform blade, the face of the style with three setiferous punctures. Aedeagus broad, the tip further produced into a slender, gently curved rod.

*Habitat*: Paraguay. Holotype, ♂, Santa Barbara, October 10, 1924 (F. Schade).

*G. (P.) eriopteroides* bears a strong superficial resemblance to certain Nearctic species of *Erioptera*, as *E. vespertina* Osten

Sacken. The closest relatives are *G. (P.) parënsis* Alexander (Brazil) and *G. (P.) thiosema* Alexander (Argentina).

**Gonomyia (Lipophleps) glabrispina** sp. n.

*Male*—Length, about 3 mm.; wing, 3.5 mm.

Belongs to the *cinerea* group; related to *G. (L.) alexanderi* (Johnson), differing chiefly in the details of structure of the male hypopygium.

Head of the unique type broken.

Pronotum light yellow, except medially. Mesonotum dark brown, the humeral region of the praescutum a little brighter, the lateral margins of the sclerite conspicuously pale sulphur-yellow; scutellum and postnotal mediotergite more or less blue-gray pruinose. Pleura light brown with a conspicuous pale yellow longitudinal stripe that widens out behind, this margined both above and below by somewhat darker lines; sternopleurite pruinose; pteropleurite and postnotal pleurotergite obscure yellow. Halteres pale, the knobs a little darkened. Legs vari-colored, as in the group; fore femora entirely black; posterior femora yellow with a pale brown subterminal ring; tibiae yellowish-white, the extreme base infuscated, the apex rather broadly blackened; tarsi black. Wings almost as in *alexanderi*, the stigmal spot smaller; wings slightly broader, the cells being a little wider, especially the 2nd Anal cell.

Male hypopygium with the three dististyles, or branches of a single profoundly divided style, much as in *G. (L.) strigilis* Alexander (Mexico); outermost style an elongate pale blade, gradually narrowed outwardly, the margin with two triangular blackened spinous teeth whose margins are entirely smooth; intermediate style a long straight black spine, connected basally with the inner style which is a pale fleshy lobe that terminates in a slender black spine, directed caudad.

*Habitat*: Argentina. Holotype, ♂, Riacho Pilaga, 10 miles northwest of Formosa, August 20, 1920 (A. Wetmore). Type in the collection of the U. S. Biological Survey.

**Gonomyia (Lipophleps) æquispinosa** sp. n.

*Male*—Length, about 3.8 mm.; wing, 4 mm.

Belongs to the *cinerea* group; most closely related to *G. (L.) strigilis* Alexander (Mexico).

General coloration almost as in *strigilis*. Mesonotal praescutum more grayish brown, paler in the vicinity of the pseudosutural fovea. Wings with the stigma obliterated; costal margin not so conspicuously whitened. Male hypopygium with the three dististyles or branches as follows: Outer dististyle a long sinuous blade that is entirely unarmed, at about three-fourths its length a little expanded, thence narrowed to the blunt tip, this apical prolongation dusky. Intermediate style a short, gently curved black spine. Inner dististyle fleshy, the caudal margin produced caudad into a curved blackened spine that is subequal in size to the intermediate style, as described. In *strigilis*

the outer dististyle is armed near base with a small, subappressed spine and the intermediate style is approximately twice as long as the spine of the inner dististyle.

*Habitat*: Paraguay. Holotype, ♂, Santa Barbara, October 10, 1924 (F. Schade).

**Gonomyia (Lipophleps) micracantha** sp. n.

*Male*—Length, about 4 mm.; wing, 3 mm.

Belongs to the *pleuralis* group; most closely related to *G. (L.) bifida* Alexander (Mexico), differing especially in the structure of the male hypopygium.

Antennæ with the basal two flagellar segments pale. Mesonotal praescutum with three reddish brown stripes that are nearly confluent in front, slightly more separated behind to reveal the yellow ground-color; lateral margins of praescutum almost white; scutal lobes reddish brown, margined internally with darker brown, the broad median area of the scutum yellow with a capillary dark brown median line; scutellum testaceous, margined posteriorly and with a conspicuous median line of brown; postnotal mediotergite pale, the cephalic portion and broader caudal region brown. Legs with the femoral subterminal brown annulus narrow, broader than the pale apex. Wings with the cord and outer end of cell 1st  $M_2$  indistinctly seamed with brown, the veins at these points dark brown. Male hypopygium with the lateral fleshy lobe of the basistyle long and slender; outer angle of basistyle a flattened chitinized blade that extends into a short acute spine. Dististyle a flattened blade, the margin produced into a long slender black spine, the apex of the style suddenly narrowed into a blunt lobe that terminates in two powerful setæ; subapical portion of style surrounding this narrowed apical lobe provided with numerous smaller setæ. Ventral gonapophyses long and slender, about three or four times as long as wide, terminating in two weakly divergent spines.

*Habitat*: Ecuador. Holotype, ♂, Pallatanga, altitude 4400 feet, March 28, 1922 (G. H. H. Tate).

**Gnophomyia** Osten Sacken.

**Neognophomyia** subgen. n.

Agreeing in general structure with *Gnophomyia*, differing especially in the venation:  $Sc$  relatively long, ending opposite  $r$ ;  $R_1$  relatively short, veins  $Sc_1$ ,  $R_1$  and  $R_2$  not widely separated from one another at wing-margin;  $r$  on  $R_{2+3}$ , usually close to midlength;  $R_2$  very short, subequal to  $R_{2+3}$ , oblique in position;  $R_3$  very long, sinuous, ending beyond the wing-apex; cell  $R_2$  at wing-margin very wide, more than six times the width of cell 2nd  $R_1$ ; distal section of vein  $R_{4+5}$  paralleling  $R_3$ ; vein  $M_{1+2}$  beyond cell 1st  $M_2$  arched; cell 1st  $M_2$  strongly widened outwardly, the inner end narrowed;  $m-cu$  near midlength of cell 1st  $M_2$ . Legs relatively short and conspicuously hairy.

Type of the subgenus:—*G. (N.) immaculipennis* sp. (Neotropical Region).

Other species included in the group are as follows: *G. (N.) bisecta* Alexander (Brazil), *G. (N.) hirsuta* Alexander (Brazil), *G. (N.) latifascia* Alexander (Peru) and *G. (N.) pervicax* Alexander (Peru).

*Neognophomyia* includes a small assemblage of Neotropical crane-flies that differ conspicuously in their general habits from *Gnophomyia* and will probably be awarded full generic value. The various species bear a resemblance to the Oriental group *Dasymallomyia* Brunetti, a comparison to which has been made by the writer in an earlier paper (*Insec. Insci. Menst.*, 1: 118; 1913). Both groups have the legs relatively short and very hairy but cell  $R_2$  in *Dasymallomyia* is not nearly so sprawly, vein  $R_3$  ending before the wing-apex.

***Gnophomyia (Neognophomyia) immaculipennis* sp. n.**

*Male*—Length, 4.5–5 mm.; wing, 4.5–5.2 mm.

Generally similar to *G. (N.) bisecta* Alexander (Brazil), differing as follows:

Head dark chestnut brown. Mesonotal praescutum with the entire surface covered with a microscopic appressed pubescence; postnotum dark brown, only the anterior lateral angles obscure yellow. Pleura yellow, with a broad dark brown dorsal stripe extending from the cervical sclerites to the postnotum, passing above the root of the halteres; sternopleurite somewhat paler brown, leaving a broad longitudinal stripe of the ground-color. Halteres pale brown, the base of the stem yellow. Wings subhyaline, without evident markings; vein brown. Venation:  $Sc_1$  ending immediately before  $r$ ;  $R_s$  weakly angulated near origin;  $R_{2+3}$  about equal to or longer than  $R_2$ ;  $m-cu$  close to midlength of cell  $1st M_2$ . Abdominal tergites dark brown, the sternite obscure yellow. Male hypopygium with the two dististyles subequal in length, the outer one more slender, glabrous, except at apex; neither style strongly chitinized. Region of the tergite produced, the caudal margin ending in two conspicuous points that are separated from one another by a deep V-shaped notch.

*Habitat*: Paraguay. Holotype, ♂, San Bernardino (Fiebrig). Paratopotypes, 2 ♂♂. Paratypes, ♂, Villarica, May 3, 1925; ♂, July 20, 1924 (F. Schade).

Type in the Collection of the Vienna Museum.

***Gnophomyia (Neognophomyia) latifascia* sp. n.**

*Male*—Length, about 5.5 mm.; wing, 5.4 mm.

Generally similar to *G. (N.) bisecta* Alexander (Brazil), differing as follows:

Head yellow, the vertex and occiput infuscated medially.

Mesonotal praescutum reddish brown with four darker brown stripes, the broad median stripe being distinctly bisected by a pale vitta. Pleura almost white, with a broad dorsal longitudinal blackish stripe, extending from the cervical sclerites to above the halteres, slightly paler immediately ventrad of the wing-root. Legs with the tibial tips not darkened, only the terminal segments of the tarsi passing into brownish black. Wings subhyaline, with a very broad dark brown band along the cord, by far the broadest and most conspicuous of any species of the subgenus so far described, extending from costa to the end of the posterior cord, including the outer ends of cells  $C$ ,  $Sc_1$ ,  $1st R$ ,  $R$  and  $M$ ; all of cell  $2nd R_1$  except the extreme outer end; base of cell  $R_2$ ; the broad bases of cells  $R_3$  and  $R_5$  and all but the center of cell  $1st M_2$ ; extreme bases of cells  $2nd M_2$ ,  $M_3$  and  $M_4$  narrowly darkened; wing-apex broadly but indistinctly darkened; veins yellowish brown, darker in the infuscated areas. Venation:  $Sc$  long,  $Sc_1$  ending opposite mid-distance between  $r$  and the fork of  $R_{2+3}$ ;  $R_s$  gently arcuated at origin;  $r$  on  $R_{2+3}$  before midlength;  $R_{2+3}$  and  $R_2$  subequal; cell  $1st M_2$  conspicuously widened outwardly,  $m$  conspicuously spurred on the proximal side;  $m-cu$  placed very obliquely, at an angle to both  $M$  and  $Cu_1$ .

Abdomen dark brown, the sternites obscure yellow. Male hypopygium as in the subgenus. Both dististyles relatively elongate, slender; the apparent prolongation of the basistyle is here heavily chitinized along its lateral margin. What seems to be a tergal structure is rounded at apex and here narrowly blackened.

*Habitat*: Peru. Holotype, ♂, Yurimaguas, April 10, 1920 (H. S. Parish).

***Teucholabis* Osten Sacken.**

***Teucholabis (Teucholabis) mythica* sp. n.**

Head shiny yellow; mesonotum shiny coal-black, restrictedly variegated with yellow; pleura black with a narrow transverse yellow girdle; wings subhyaline, the small stigma dark brown.

*Male*—Length, about 5.5 mm.; wing, 6.5 mm.

Rostrum shiny obscure yellow; palpi dark brown. Antennae with the scapal segments obscure yellow, the flagellum brown; flagellar segments oval, the lower apical angle of the individual segments a little produced. Head shiny yellow, the sides of the vertex a trifle infuscated.

Pronotum shiny pale yellow, the cephalic portion of the anterior notum darker. Lateral pretergites narrowly yellow. Mesonotal praescutum gibbous, shiny coal-black, the small humeral angle restrictedly yellow; immediately before the suture a yellow area that crosses the suture and includes the median area of the scutum and all of the median lobe of the scutellum; scutal lobes largely shiny black, the color continued across the suture and confluent with the praescutal area; lateral and posterior angles of the scutal lobes yellow; parascutella black;

postnotum entirely black. Pleura shiny black, variegated by the yellow of the dorso-pleural membrane and a narrow transverse girdle that extends from the wing-root across the pteropleurite to the meron; anterior spiracle dark. Halteres brownish black, the knobs conspicuously light yellow. Legs with the coxæ and trochanters yellow; femora yellow, the tips conspicuously infuscated, very broadly so on the fore femora; tibiæ brown, the tips darker brown; tarsi brown. Wings subhyaline; cell *Sc* darker on basal two-thirds; stigma narrowly oval, darker brown; a vague dark seam on the anterior cord; veins dark brown. Venation: *Sc* of moderate length, *Sc*<sub>1</sub> ending at about opposite one-third the length of *Rs*, *Sc*<sub>2</sub> immediately beyond this origin; *r* close to tip of *R*<sub>1</sub> and on *R*<sub>2+3</sub> immediately beyond the cord; vein *R*<sub>2+3</sub> gently sinuous, elongate, so cell 2nd *R*<sub>1</sub> at wing-margin is nearly twice as wide as cell *R*<sub>3</sub>; cell 1st *M*<sub>2</sub> strongly widened outwardly, vein *M*<sub>1+2</sub> arched as it issues from the cell; *m-cu* just beyond the fork of *M*.

Abdomen dark brown, the distal tergites restrictedly paler laterally; basal sternites largely black, the outer sternites yellow; hypopygium black. Sternal pocket developed.

*T. (T.) mythica* is allied to the smaller *T. (T.) hilaris* Alexander (Peru), differing in the body-coloration and wing-pattern.