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NEW SPECIES OF CRANE-FLIES FROM TROPICAL AMERICA (Diptera: Tipulidae). I.[1]

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Great series of Tipulidae from many parts of the Neotropical region have become available over the many years, and despite the fact that some 2000 novelties have been described, a number of very interesting species await definition. At this time I am considering some species that were taken in Mexico and Costa Rica, with still others that were received from Señor Luís Peña, collected in the Department of Cuzco, Peru, along the Marcapata River, in 1962. Except where indicated to the contrary, the types of the new species are preserved in my personal collection.

Ctenophora (Pselliophora) margarita, new species

Body, antennae, legs, and halteres intensely dull black; wings deep orange yellow, the extreme base and the cells beyond cord abruptly brownish black.

MALE. Length about 18–19 mm; wing 18–18.5 mm; antenna about 8.3–8.5 mm.

Entire body intensely dull black, including also the palpi, antennae, legs, and halteres. Wings deep orange yellow, the costal region more saturated, extreme base blackened; cells beyond cord abruptly brownish black, bases of cells *1st* M_2 and M_3 yellowed; veins orange yellow, brownish black in the darkened parts. Wings broad, including cell *C*. Venation: Cell M_1 sessile; *m-cu* at fork of M_{3+4}.

Holotype, ♂, 48 miles west of El Salto, Durango, Mexico, 8000 feet, July 19, 1952 (S. Weitsman); California Insect Survey Collection, Berkeley. Paratopotype, ♂, in Alexander Collection.

This exceptionally beautiful species is named in honor of my wife and constant helpmate, Mabel Marguerite Alexander. It is well distinguished from the two Neotropical members of the subgenus hitherto described by the coloration of body and wings. These species are *Ctenophora (Pselliophora) mesamericana* (Alexander, 1944), of Guatemala, and *C. (P.) venezuelensis* (Alexander, 1944), of Venezuela. In its blackened coloration it is most similar to the latter species, differing in the wing pattern where only the wing apex is darkened. A key to these previously defined species has been provided in an earlier paper by the writer (Bol. Entomol. Venezolana 3: 40; 1944). The present arrangement of subgenera in *Ctenophora* has been discussed in still another report (Philippine Jour. Sci. 83: 264–265; 1954).

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Hexatoma (*Eriocera*) *sculleniana,* new species

General coloration of the entire body black, mesonotal praescutum chiefly reddish orange, its anterior third blackened; legs black, proximal three segments of posterior tarsi whitened; wings blackened, with a major whitish area before the cord, involving approximately one third the wing length; R_{2+3+4} about twice R_{2+3}; cell *1st* M_2 long-subrectangular, *m-cu* gently sinuous, at near two thirds M_{3+4}.

FEMALE. Length about 17 mm; wing 13.5 mm; antenna about 3 mm.

Rostrum and palpi black. Antennae black throughout, in female 11-segmented; proximal five flagellar segments gradually decreasing in length and thickness, six to eight subequal to one another, terminal segment about one half longer. Head black.

Prothorax black. Mesonotal praescutum reddish orange, the anterior third blackened, remainder of notum and the pleura uniformly black. Halteres black. Legs blackened, the posterior tarsi with segments one to three white, their extreme tips darkened. Wings blackened, with a single very large whitened area before the cord, including cells *R, M,* and *Cu* with the exception of their outer ends, more than the central half of *1st A* and the basal third of cell R_1; veins brownish black, *M* in the whitened area slightly paler. Venation: R_{2+3+4} about twice R_{2+3} or R_{1+2}; cell *1st* M_2 long-subrectangular, subequal in length to vein M_4; *m-cu* at near two thirds M_{3+4}, gently sinuous, longer than distal section of Cu_1.

Abdomen polished black. Ovipositor with cerci very long and slender, gently upcurved, the ventral shield more reddened.

Holotype, female, six miles west of Turrialba, Costa Rica, 3800 feet, July 21, 1963 (H. A. Scullen).

This attractive fly is dedicated to the collector, Dr. Herman A. Scullen, to whom I am indebted for many new and rare species. It is entirely distinct from the numerous regional members of the subgenus in the whitened posterior tarsi and the conspicuous wing pattern. By my early key to the Neotropical species (Psyche, 21: 34–37; 1914), the fly runs to *Hexatoma* (*Eriocera*) *magnifica* (Alexander), of Guatemala, an entirely different species.

Elephantomyia Osten Sacken: *Xenoelephantomyia,* new subgenus

Characters as in *Elephantomyia* Osten Sacken, differing especially in the wings having a single anal vein. Antennae 15-segmented; flagellar verticils very long, exceeding the segments. Tibial spurs lacking. Anal field of wing reduced in area, with a single vein; a long darkened line or fold along cephalic border of this vein, departing near end of the latter and continued outwardly into cell *Cu* to virtually opposite *m-cu,* paralleling the vein. This latter element presumably represents a vestige of the 1st anal vein which otherwise is lacking. Vein Cu_2 not present.

Type of subgenus—*Elephantomyia* (*Xenoelephantomyia*) *peñai,* new species. Neotropical region: Peru.

The fly under consideration is of unusual interest in having a single anal vein in the wings, a very uncommon condition in the family Tipulidae, being found also in the Limoniini (*Limonia*: *Doaneomyia* Alexander) and in the Cylindrotominae (*Stibadocerella* Brunetti, 1918; synonym, *Agastomyia* de Meijere, 1919). In both of these latter instances it is evident that the vein *2A* has been lost by its gradual shortening and final disappearance by fusion with the wing margin. This is not the case in the present fly where it appears that the retained vein represents *2A* while *1A* seems to have been lost in the manner discussed above.

Elephantomyia (*Xenoelephantomyia*) *peñai*, new species

Thorax orange throughout; antennae black, scape and pedicel yellow; halteres black; legs brown, tarsi chiefly snowy white; wings very weakly darkened, cells *C* and *Sc* more infuscated; abdomen orange, intermediate sternites with their basal rings brown to dark brown.

FEMALE. Length, excluding rostrum, about 5.5–6 mm; wing 4–5.5 mm; rostrum about 3.2–4 mm.

Rostrum approximately two-thirds the remainder of body, brownish black. Antennae 15-segmented; scape and pedicel yellow, flagellum black; first flagellar segment about one-third longer than the second; verticils very long. Head orange.

Thorax orange throughout. Halteres black. Legs with coxae and trochanters yellow; femora brown, darker outwardly; tibiae and proximal two-thirds of basitarsi dark brown, remainder of tarsi snowy white. Wings very weakly darkened, cells *C* and *Sc* more infuscated; a weak darkening in outer end of cell Sc_1, representing the reduced stigma; veins brown. Venation: Sc_1 ending shortly before fork of *Rs*, Sc_2 longer, near its tip; cell R_2 at margin nearly twice as extensive as cell R_4; inner end of cell *1st* M_2 arcuated; *m* reduced, especially in the holotype, where it is nearly punctiform; *m-cu* longer than distal section of Cu_1, placed at or beyond midlength of M_{3+4}; a single anal vein, as discussed under the subgenus.

Abdomen orange; intermediate sternites with their basal rings brown to dark brown. Ovipositor with valves elongate; cerci slender, the tips upcurved.

Holotype, female, Quincemil, Cuzco, Peru, along the Marcapata River, 750 meters, at light, October 15–20, 1962 (L. E. Peña). Paratopotype, ♀, October 20–30, 1962.

This interesting fly is named for the collector, Señor Luís E. Peña, to whom I am greatly indebted for many crane-flies from several countries of South America. The only other regional species of the genus having snowy white tarsi are *Elephantomyia* (*Elephantomyia*) *chionopoda* Alexander and *E.* (*E.*) *tarsalba* Alexander, both belonging to the typical subgenus, with two anal veins.

Gnophomyia (*Gnophomyia*) *astuta*, new species

Body and appendages black; wings obscurely whitened, patterned with brown, including broad bands over the basal fifth, along cord and narrowly at apex; male hypopygium with tergite narrow, posterior border very gently emarginate, bearing a series of about 100 spinoid setae; proximal end of basistyle on mesal face with a long blackened spine; outer dististyle long, gently curved, inner style about two-fifths as long, outwardly expanded into a broad head.

MALE. Length about 7 mm; wing 6 mm; antenna about 2.3 mm.

Body, together with the antennae, palpi, legs and halteres, black. Flagellar segments a little shorter than the longest verticils.

Wings patterned, the ground obscurely whitened, more or less banded with pale brown, including broad areas over basal fifth of wing, along cord, and very narrowly at apex; basal band paler in cell *2A*, the second broadest on cephalic part, narrowed along cord, all bands interconnected by the similarly darkened costal border that includes cells *C* and *Sc*; a comparable darkened seam along vein *Cu* in cells *M* and M_4; stigmal area scarcely differentiated; veins brownish black. Venation: R_{2+3+4} from about one and one-half to twice R_{2+3}; *r-m* close to fork of *Rs*; *m-cu* at near two-thirds M_{3+4}.

Male hypopygium with tergite narrowly transverse, posterior border very gently emarginate, with an uninterrupted series of about 100 long dark spinoid setae, those at ends of row not differentiated. Basistyle on mesal face at proximal end with a very long blackened spine, its surface with few microscopic denticles, tip long-acute. Outer dististyle long, gently curved, narrowed outwardly, with a low flange on lower margin near apex; inner style about two-fifths as long, expanded outwardly into a broad head nearly three times as wide as diameter of stem, provided with several very long setae.

Holotype, male, Quincemil, Cuzco, Peru, August 18, 1962 (L. E. Peña).

Gnophomyia (*Gnophomyia*) *astuta* is very different from other regional species in which the male hypopygium has a tergal comb and a single spine on mesal face of basistyle, in the broadly dilated apex of the inner style. The wing pattern is distinctive. Other Peruvian species having a tergal comb and a single spine on the basistyle include *G.* (*G.*) *certa* Alexander and *G.* (*G.*) *petentis* Alexander, with others still undescribed.

Gnophomyia (*Gnophomyia*) *bipectinata*, new species

Allied to *kertesziana* and *tiresias;* male hypopygium with the comb of spinoid setae on tergite broadly interrupted medially, lateral tergal angles not produced; basistyle on mesal face at near two-thirds the length with a small spinous point; inner dististyle at apex with from four to six spinous points.

MALE. Length about 6.5–7 mm; wing 5–5.5 mm; antenna about 2.2–2.3 mm.

Head and thorax dull black, the ventral thoracic pleura more pruinose. Antennae with scape and pedicel black; remainder broken.

Wings before cord weakly infuscated, strongly darkened beyond; a still darker brown band at cord, ending behind at vein *Cu* which is narrowly bordered by brown in cell *M*; veins brownish black. Venation: *r-m* close to fork of *Rs*; *m-cu* at near midlength of M_{3+4}.

Male hypopygium with the tergite large, parallel-sided, posterior border strongly emarginate to form broad oblique lobes, each provided with approximately 50 long black spinoid setae that form dense brushes; outer lateral angles of tergite not farther produced into setal pencils as in some other species; brushes of either side broadly interrupted by the median emargination. Basistyle on mesal face at near two-thirds the length with a small spinous point, with no further modification at base, as in several species. Outer dististyle a nearly straight glabrous rod, its tip obtuse; inner style about two-fifths as long, on outer third with a row of from four to six strong spines, the spikes at and near apex larger, surface of style with scattered erect setae. Phallosome with lateral plates of apophyses not evenly rounded, slightly more produced at tips.

Holotype, male, Quincemil, Cuzco, Peru, August 1962 (L. E. Peña).

The most similar regional species include *Gnophomyia* (*Gnophomyia*) *kertesziana* Alexander and *G.* (*G.*) *tiresias* Alexander, both differing evidently in the structure of the male hypopygium, especially the tergite, basistyle and inner dististyle.

Gnophomyia (*Gnophomyia*) *delectabilis,* new species

Body and appendages dull black; wings yellowish white with broad brown bands at cord and apex; cord of wings unusually far basad, near midlength, outer veins thus very long; cell *1st* M_2 small, less than one-third the outer section of vein M_{1+2}; male hypopygium with posterior border of tergite truncate, with a sparse series of about thirty short points; inner dististyle stout, its outer border emarginate; phallosome with apices of gonapophyses microscopically serrate.

MALE. Length about 6.5 mm; wing 6 mm; antenna about 2.1 mm.

Body dull black, the ventral thoracic pleura with a light gray longitudinal stripe. Palpi, antennae, halteres and legs black.

Wings with the ground yellowish white, with two broad brown bands, the first at cord, ending behind at *Cu,* the second band including the broad apex, involving about the outer fifth of wing; a brown seam along vein *Cu* in cell *M,* outer end of vein *1A* paler brown, slightly darker in the patterned areas. Venation: Cord unusually far basad, at near midlength of wing, the outer veins thus very long; *Rs* short, straight, about one-fifth longer than R_{2+3+4}; cell *1st* M_2 rectangular, small, less than one-third the outer section of vein M_{1+2}; *m-cu* shortly before midlength of M_{3+4}; vein *2A* curved into the wing margin, the cell relatively broad.

Male hypopygium with posterior border of tergite virtually truncate, with a sparse series of about 30 short points extended into hairline filaments. Outer dististyle a short curved rod that narrows to an acute blackened point; inner style about two-thirds as long, stout, the outer border emarginate, forming a rounded or slightly pointed hump near midlength, smaller than the apical enlargement. Phallosome with apices of gonopophyses microscopically serrate. Aedeagus dilated basally, the slender outer end slightly expanded.

Holotype, male, Quincemil, Cuzco, Peru, August 1962 (L. E. Peña).

Gnophomyia (*Gnophomyia*) *delectabilis* is quite distinct from other regional species in the venation and structure of the male hypopygium, particularly the tergite and inner dististyle. The armature of the tergal border is somewhat intermediate between the conditions found in *G.* (*G.*) *kertesziana* Alexander and allies, having abundant long spinoid setae, and *G.* (*G.*) *glabritergata,* new species, where the tergal border is glabrous. The unusually long outer wing veins suggest the condition found in *G.* (*G.*) *nectarea* Alexander, an otherwise very different fly.

Gnophomyia (*Gnophomyia*) *glabritergata,* new species

Allied to *trisetigera*; general coloration of body black, thoracic pleura with a more pruinose ventral stripe; wings weakly blackened, stigma and a seam along vein *Cu* darker, outer ends of cells *R* and *M* more whitened; male hypopygium with posterior border of tergite glabrous; tubercle on mesal face of basistyle with several strong setae; inner dististyle terminating in an irregular head, the apex squarely truncate, produced into a slender spine before end.

MALE. Length about 6 mm; wing 5.2 mm; antenna about 2.3 mm.

General coloration black; lateral end of pronotal scutellum restrictedly yellow; a more pruinose longitudinal stripe on ventral thoracic pleura, extending from behind the fore coxae to the abdomen, more expanded behind. Antennae, halteres and legs black.

Wings weakly darkened, outer ends of cells *R* and *M* more whitened; stigma long and narrow, darker brown; a paler brown seam in cell *M* adjoining vein *Cu*. Venation: *r-m* on *Rs* shortly before fork; cell *1st* M_2 long and narrow, with *m-cu* near midlength.

Male hypopygium with tergite transverse, posterior border broadly and shallowly emarginate, lobes rounded, in the paratype slightly more produced; border entirely glabrous, without the spinoid setae found in virtually all other regional species of the group; setae of tergal disk sparse but long. Basistyle short and stout, proximal end of mesal face with a small tubercle that bears five or six strong setae and additional setigerous punctures. Outer dististyle relatively stout, very gently curved, outer end obtuse, the extreme inner angle slightly pointed; a lateral flange extends almost to base of style, its margin with microscopic roughenings; inner style about one-half as long, narrowed outwardly, at end expanded into an irregular head, the apex squarely trun-

cate, before end produced into a slender spine, the head with interpolated setae. Phallosome with apex of each half obtusely rounded.

Holotype, male, Quincemil, Cuzco, Peru, August 18, 1962 (L. E. Peña). Paratopotype, male.

The only other generally similar regional species is *Gnophomyia* (*Gnophomyia*) *trisetigera* Alexander, which differs evidently in the hypopygial structure, including the basistyle and inner dististyle.

Molophilus Curtis: *Rhynchomolophilus,* new subgenus

Characters generally as in the subgenera *Molophilus* and *Eumolophilus,* differing from all in the elongate rostrum which is approximately one and one-half times as long as the remainder of the head. The male sex remains unknown. All other members of the genus have the rostrum small and inconspicuous, less than one-half the remainder of the head.

Type of subgenus—*Molophilus* (*Rhynchomolophilus*) *perrostratus,* new species. Neotropical region: Peru.

Molophilus (*Rhynchomolophilus*) *perrostratus,* new species

Rostrum long, stouter at base, approximately one and one-half times the remainder of head, intensely black, provided with long erect setae; palpi black, four segmented, placed at apex of rostrum. Antennae with scape black, pedicel paler, flagellum broken. Head dark grayish brown.

Thorax blackened, dusted with gray to appear pruinose, more evidently so on pleura; pseudosutural foveae blackened, unusually long and conspicuous. Halteres short, knob very large, black, the base of stem paler. Legs with coxae and trochanters yellowish brown; remainder of legs black, proximal third of femora yellowed, tibiae black, the basal seventh yellow, surface of blackened parts with very long black setae; basitarsi white, tips very narrowly darkened, remainder of tarsi black, the setae shorter. Wings slightly darkened, veins and macrotrichia dark brown. Venation: R_2 lying far basad of *r-m,* the latter at fork of R_{4+5}; cell M_3 short, about one-half its petiole; vein *2nd A* relatively long, ending before level of *m-cu.* Abdomen black.

Holotype, female, Quincemil, Cuzco, Peru, 740 meters, August 1962 (L. E. Peña). Paratopotypes, 2 females.