

to *Notomyza* . . . ,” as do the discussion and figures by Hennig (1958, p. 630, figs. 231, 234, 238, 239, 242). Thus, I am now of the opinion that *Cinderella* must be considered a member of the Heleomyzidae in the broader sense in which Malloch (1933, p. 178–198) treated that family when he described *Notomyza*.

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NEW SPECIES OF CRANE FLIES FROM TROPICAL AMERICA. V. (Diptera: Tipulidae)¹

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ABSTRACT

New species of crane flies are described, chiefly from Panama, including *Orimarga* (*Diotrepha*) *luteipleura*, *Polymera* (*Polymera*) *cingulata*, *Atarba* (*Atarba*) *fieldiana*, *Atarba* (*Atarba*) *panamensis*, *Gonomyia* (*Gonomyia*) *stenorhabda*, *Gonomyia* (*Gonomyia*) *stylacantha*, and *Gonomyia* (*Paralipophleps*) *uncinata*, from Panama, and *Gonomyia* (*Lipophleps*) *minutistyla* from Grenada, Lesser Antilles.

Virtually all of the included species are from Panama, where they were collected by my friend and former student, Lt. Col. Gordon Field of the University of Rhode Island, Kingston. One further species is from the Lesser Antilles, taken by Noel L. H. Krauss of Honolulu. I express my continued appreciation to the collectors for cooperation in the survey of the crane flies of Tropical America. The types are preserved in the Alexander Collection of Crane Flies.

***Orimarga* (*Diotrepha*) *luteipleura*, new species**

Thorax clear yellow, especially the pleura, central area of notum weakly infuscated; antennal scape dark brown, remainder obscure

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yellow; legs whitened, tips of femora and bases and tips of tibiae blackened; wings yellowed, prearcular and costal fields clear light yellow, veins very pale brown; macrotrichia of veins excepting costa virtually lacking, vein R_{1+2} atrophied; abdomen long, brownish yellow, extreme posterior borders of segments light brown.

FEMALE. Length about 7.8–8 mm; wing 4.8–5.2 mm.

Rostrum brownish black, palpi black. Antennae with the elongate scape dark brown, remainder obscure yellow; flagellar segments oval. Head light brown.

Cervical region and pronotum dark brown. Mesonotal praescutum clear yellow laterally, median region weakly infuscated, remainder of notum pale brown, the sides broadly yellow. Pleura uniformly clear light yellow. Halteres with stem light yellow, knob weakly darkened. Coxae and trochanters light yellow; remainder of legs white, the femoral tips blackened, tibial bases and tips more narrowly black, about one-third the femoral darkening. Wings yellowed, prearcular and costal fields clear light yellow; veins very pale brown, in the costal region more yellowed, poorly differentiated against the ground. Macrotrichia of veins very reduced in numbers, including a costal series and one or two widely separated trichia on distal section of M_{1+2} . Venation: Sc long, Sc_1 ending about opposite midlength of the very long Rs ; R_2 curved into R_{2+3} opposite $r-m$. R_{1+2} atrophied; cells beyond cord relatively short.

Abdomen long, obscure brownish yellow, the extreme posterior borders of segments light brown, subterminal segment darker. Ovipositor large and conspicuous, especially the hypovalvae, cerci small and slender.

Holotype female, Fort Gulick, Panama, January 21, 1954 (Gordon Field). Paratopotypes, 2 females, January 13–21, 1954; 1 broken specimen of unknown sex, Taboga Barracks, Panama, December 10, 1953 (Gordon Field).

Other members of the subgenus having the leg pattern somewhat as in the present fly include *Orimarga (Diotrepha) arawak* Alexander, of Jamaica; *O. (D.) atribasis* (Alexander), of northern South America; and the type of the subgenus, the Nearctic *O. (D.) mirabilis* (Osten Sacken), none of which have the clear light yellow thoracic pleura and all differing further among themselves in venation and trichiation of the wing veins.

***Polymera (Polymera) cingulata*, new species**

Rostrum brown, palpi yellow; antennae of male relatively short, slightly exceeding in length the body or wing; yellow, central parts of the intermediate flagellar segments brownish black to produce a bicolored appearance; mesonotal praescutum and scutum brown, posterior sclerites of notum and the pleura brownish black; legs yellow, femora with a conspicuous brown subterminal ring, tarsi yellow; wings strongly suffused with brown, Sc short, Sc_1 ending opposite fork of Rs ; R_{1+2} and

R_{2+3} subequal; abdomen light brown, its pleural region more blackened.

MALE. Length about 4.5 mm; wing 4.6 mm; antenna about 5 mm.

Rostrum brown, palpi yellow. Antennae of male relatively short, slightly exceeding body or wing; scape and pedicel light yellow; first flagellar segment obscure yellow, slightly darker outwardly; succeeding segments bicolored, brownish black, the narrow base and slightly broader outer end whitened, amount of latter color more reduced on intermediate segments, outer ones uniformly darkened; intermediate part of flagellar segments slightly binodose, each with two separate groups of very long outspreading setae that are slightly longer than the segments. Head large, dark brown.

Mesonotal praescutum and scutum brown, posterior sclerites of notum and the pleura brownish black. Halteres moderately infuscated. Coxae and trochanters light yellow; all femora yellow with a conspicuous subterminal brown ring that is slightly wider than yellow apex; tibiae obscure yellow, tips very narrowly darkened, tarsi yellow. Wings strongly suffused with brown, with indications of a reduced slightly darker cloud over anterior cord; veins brown. Venation: Sc short, Sc_1 ending opposite fork of Rs , Sc_2 near its tip; R_{1+2} and R_{2+3} subequal; R_{2+3+4} subequal to nearly twice the basal section of R_5 ; cell M_1 small; $m-cu$ close to fork of M .

Abdomen light brown, pleural region more blackened, outer segments broken.

Holotype male, Pina, Panama, January 19, 1954 (Gordon Field). Paratopotype, a broken male, April 20, 1954.

Polymera (Polymera) cingulata is quite distinct from other regional members of the subgenus in the combination of bicolored antennae, pattern of the femora, and the short vein Sc . Other such species that have the tips of the femora yellowed or whitened included *P. (P.) albogenualis* Alexander and *P. (P.) geniculata* Alexander, which otherwise are quite different flies.

Atarba (Atarba) fieldiana, new species

Thorax fulvous brown, head darker; antennae of male elongate, flagellar segments with short vestiture; legs yellow, extreme tips of femora blackened; wings brownish yellow, stigma pale brown; abdomen yellowed, subterminal segments brown; male hypopygium with outer dististyle blackened, the outer half with a long terminal spine and two separated points on outer margin, inner style slender; aedeagus very small, narrowed gradually to slender apex.

MALE. Length about 6 mm; wing 5 mm; antenna about 3.7 mm.

FEMALE. Length about 5.5 mm; wing 5.5 mm.

Rostrum yellow, proximal segments of palpi light brown, outer segments darker, terminal one long, subequal to preceding two combined. Antennae with scape yellow, flagellum black, in male incisures of proxi-

mal three or four segments restrictedly pale, in female bicolored appearance more evident, involving proximal six or seven segments; in male flagellar segments long-cylindrical, vestiture dense but short and inconspicuous, approximately one-sixth to one-seventh as long as the segments. Head brown.

Thorax almost uniformly fulvous brown. Halteres with stem obscure yellow, knob dark brown. Legs with coxae fulvous, trochanters yellow; remainder of legs yellow, extreme tips of femora blackened; outer tarsal segments dark brown. Wings brownish yellow, prearcular and costal fields pale yellow, stigma pale brown, elongate; veins pale brown. Longitudinal veins beyond general level of cord with numerous trichia. Venation: Sc short, Sc_1 ending before origin of Rs , the latter short and straight, subequal to basal section of R_5 , slightly longer in female; $m-cu$ at from about one-fourth to one-sixth M_{3+4} .

Abdomen of male yellowed, proximal five segments restrictedly patterned laterally and subterminally with pale brown, segments 7 and 8 with posterior half of 6 darker brown to form a ring; hypopygium light yellow. In female, abdominal tergites yellowish brown, sternites clearer yellow. Male hypopygium with tergal plate subquadrate, outer lateral angles produced laterad into acute points. Basistyle on mesal face with a very small subterminal lobe. Outer dististyle distinctive, blackened, outer half slightly expanded, the terminal beak very slender, outer apical angle with a single strong spine, at about midlength of style on outer margin with one or two small points; inner style slightly longer, appearing as a slender straight rod, its tip obtuse. Aedeagus very small, narrowed gradually to slender apex.

Holotype male, El Valle, Panama, 2,000 feet, December 23, 1953 (Gordon Field). Allotopotype female, pinned with type.

I take pleasure in dedicating this fly to Dr. Gordon Field, to whom I am indebted for many new and rare Tipulidae from Central America. There is no closely related species. The general appearance of the outer dististyle of the hypopygium is somewhat as in *Atarba (Atarba) laterospina* Alexander, of Bolivia, but the other hypopygial features are quite distinct.

***Atarba (Atarba) panamensis*, new species**

Small (wing of male nearly 5 mm); general coloration fulvous yellow, abdomen with a broad subterminal darker ring; antennae of male elongate, flagellar segments with long outspreading setae; legs brownish yellow; wings brownish yellow, prearcular and costal fields clearer yellow; Sc_1 ending nearly opposite origin of Rs ; male hypopygium with outer dististyle dilated beyond midlength, thence narrowed into a slender rod, outer margin with spines; aedeagus simple, very long, extending to beyond the outer ends of the styli.

MALE. Length about 5 mm; wing 4.8 mm; antenna about 3.2 mm. Rostrum brownish yellow, palpi brown. Antennae of male elongate,

approximately three-fourths length of wing; flagellar segments long, proximal half or more slightly enlarged, provided with long outspreading setae, longest about two-thirds length of segment; vestiture at outer ends of segments reduced to small delicate setae; flagellum brown, bases of segments slightly darker. Head brownish yellow.

Thoracic dorsum almost uniformly fulvous yellow, pleura clearer yellow. Halteres brownish yellow, knobs slightly darker. Legs with coxae and trochanters yellow; remainder of legs brownish yellow, outer segments slightly darker. Wings brownish yellow, prearcular and costal fields clearer yellow; veins pale brown, yellowed in the brightened fields. Macrotrichia on longitudinal veins beyond general level of origin of R_s with a further series on outer half of 2nd A . Venation: Sc short, Sc_1 ending just beyond origin of R_s , the latter very short, subequal to basal section of R_5 ; branches of R_s diverging very gradually, cell R_2 at margin about two-thirds cell R_4 ; cell 1st M_2 closed but basal section of M_3 very faint; $m-cu$ close to fork of M .

Abdomen brownish yellow, subterminal segments brown to form a broad ring, hypopygium yellow. Male hypopygium with tergal plate small, subrectangular in outline, the outer lateral angles only slightly produced. Dististyles terminal; outer style dilated beyond midlength, with a few blackened spines on outer margin, the slender outer fifth of style with similar, more appressed spines; inner style a slender gently curved rod, tip obtuse. Aedeagus long and conspicuous, extended caudad beyond the level of the styli, appearing as a simple broadly flattened blade that is strongly sinuous before midlength.

Holotype male, El Valle, Panama, 2,000 feet, December 23, 1953 (Gordon Field).

Other somewhat similar species having the antennae and aedeagus elongate include *Atarba (Atarba) mexicana* Alexander and *A. (A.) religiosa* Alexander, both of Mexico, that differ from the present fly in structure of the antennae and male hypopygium and in the venation, especially Sc , R_s , and the position of $m-cu$. Still other Neotropical species of *Atarba* have the aedeagus similarly lengthened but profoundly bifurcate.

Gonomyia (Gonomyia) stenorhabda, new species

General coloration of praescutum and scutal lobes brown, pleura yellow; rostrum yellow; legs light brown; wings faintly infuscated, Sc_1 ending about opposite origin of R_s , R_{2+3+4} subequal to or longer than R_s , $m-cu$ at near one-fourth M_{3+4} ; male hypopygium with dististyles terminal, apex of basistyle not produced; phallosome including very long slender rodlike gonapophyses; aedeagus nearly as long, depressed-flattened, the outer two-thirds, more widened.

MALE. Length about 4–5 mm; wing 4–6 mm.

Rostrum yellow, palpi brownish black. Antennae with scape brown, broadly yellowed basally, remainder of organ dark brown; proximal

flagellar segments long-oval, the outer ones longer and more slender. Head dark brownish gray.

Pronotal scutum yellowish brown, scutellum light yellow. Mesonotal praescutum with three confluent brown stripes, sides narrowly yellowed, scutal lobes brown, remainder of notum yellowed. Pleura yellowed. Halteres with stem light brown, knob brownish black. Coxae and trochanters yellow, remainder light brown. Wings faintly infuscated, stigma pale brown, poorly delimited; veins brown. Venation: Sc_1 ending opposite or just beyond origin of R_s , Sc_2 near its tip; R_{2+3+4} long, subequal to or longer than R_s ; $m-cu$ at near one-fourth M_{3+4} ; cell *2nd A* narrow.

Abdomen brown, hypopygium yellowed. Male hypopygium with dististyles terminal, basistyle not produced; outer style long-oval, apex pointed, longest setae nearly equal in length to style; inner style including a slender blackened spine curving gently to the acute tip, rostral portion shorter, with two long fasciculate setae. Phallosome including very long slender rodlike gonapophyses that are subequal in length to or slightly exceed the central aedeagus, each rod very slightly thickened outwardly, before apex narrowed into a long spine. Aedeagus elongate, depressed-flattened, outer two-thirds broader, apex nearly truncate, membranous.

Holotype male, El Valle, Panama, 2,000 feet, December 23, 1953 (Gordon Field). Paratopotypes, several males, December 13–22, 1953.

In its hypopygial characters, *Gonomyia* (*Gonomyia*) *stenorhabda* is most similar to *G. (G.) mexicana* Alexander among the described regional species, differing especially in the phallosome, including the very long slender gonapophyses.

***Gonomyia* (*Gonomyia*) *stylacantha*, new species**

Allied to *quaesita*; mesonotal praescutum and scutal lobes dark brown, pleura and pleurotergite yellowed; Sc short, $m-cu$ at near one-third M_{3+4} ; male hypopygium with both dististyles including simple curved horns, the larger inner horn with two acute spines and long setae; phallosome with gonapophyses relatively short, nearly equal in shape and size.

MALE. Length about 3 mm; wing 3.6 mm.

Rostrum obscure yellow, palpi brownish black. Antennae with scape darkened, base yellowed, pedicel dark brown, flagellum paler brown. Head yellow, vertex slightly darkened medially.

Pronotum and pretergites yellowed. Mesonotal praescutum with disk brown, sides broadly yellow; scutal lobes dark brown, posterior sclerites paler brown, pleurotergite and posterior border of scutellum yellow. Pleura yellowed, clearer on posterior sclerites. Halteres with stem whitened, knob infuscated. Legs with coxae chiefly yellowed, trochanters clear yellow; remainder of legs light brown. Wings faintly darkened, prearcular and costal fields slightly more yellowed; veins pale brown. Longitudinal veins of outer three-fourths of wing with trichia. Venation:

Sc short, Sc_1 ending some distance before origin of R_s , the distance only a little less than the latter vein, Sc_2 slightly removed; R_{2+3+4} long, nearly twice R_s ; R_3 short, oblique, $m-cu$ at near one-third M_{3+4} .

Abdomen brown, including hypopygium. Male hypopygium with outer dististyle a simple gently curved horn, tip acute, near base on outer face with a setiferous tubercle; inner style bifid, the outer sclerotized portion a larger curved horn bearing two acute spines on face at and below midlength, with a few setae, the outermost very long; rostral prolongation of style relatively long, terminating in two unequal fasciculate setae. Phallosome with gonapophyses relatively short, nearly equal in size and shape; aedeagus with a small slender blackened spine, the structure beyond it pale and membranous.

Holotype male, El Valle, Panama, 2,000 feet, December 22, 1953 (Gordon Field). Paratopotype male, pinned with type.

Gonomyia (*Gonomyia*) *stylacantha* is related to various other Neotropical species that center about *G. (G.) quaesita* Alexander, including also *G. (G.) anduzei* Alexander, *G. (G.) animula* Alexander, *G. (G.) birama* Alexander, and *G. (G.) dominicana* Alexander, all being most readily distinguished among themselves by hypopygial characters.

***Gonomyia* (*Paralipophleps*) *uncinata*, new species**

Allied to *pleuralis*; basistyle of male hypopygium with a single long slender spine, fleshy lobe relatively short; dististyle with a strongly curved black spine; phallosome with gonapophyses long and slender; ventral plate terminating in a strong curved blackened spine.

MALE. Length about 5 mm; wing 3.2 mm.

FEMALE. Length about 6 mm; wing 4.6 mm.

Coloration generally as in *pleuralis* and allies. Rostrum and palpi black. Antennae with scape and pedicel yellow, the former darkened beneath; flagellum black. Head yellow, posterior vertex darkened.

Pronotum and pretergites light yellow. Mesonotal praescutum and scutum chestnut brown, scutellum in type blackened; postnotum blackened, with a yellowed area at cephalic end of the interpostnotal suture. Pleura brownish black, with a conspicuous whitened longitudinal stripe that includes the fore coxae, extended caudad to include base of abdomen. Halteres with stem pale brown, knob obscure yellow. Legs with coxae and trochanters yellowed, the fore pair more whitened, as described; femora dark brown, tibiae and tarsi slightly paler brown. Wings weakly darkened; stigma dark brown, preceded and followed by more yellowed areas.

Abdomen brown, restrictedly variegated with paler, posterior borders of segments narrowly more darkened; hypopygium brownish yellow. Male hypopygium with basistyle bearing a single long slender spine, fleshy lobe relatively short, about three times as long as broad. Dististyle with a single strongly curved blackened spine at base of the subrectangular beak, the latter with the usual pair of strong setae, at base of style with a

large flattened yellow plate. Phallosome with gonapophyses appearing as long slender spines, their outer ends blackened; ventral plate terminating in a single strongly curved black spine, in the unique slide mount this structure appearing to be single, not paired as in *pleuralis*.

Holotype male, Fort Gulick, Panama, January 13, 1954 (Gordon Field).

In the strong blackened spine of the ventral plate of the phallosome, the present fly agrees most closely with *Gonomyia (Paralipophleps) pleuralis* (Williston), differing in all other hypopygial structures. As indicated on the slide mount of this organ, the spine appears to be single and not paired, as in *pleuralis*, but this condition may prove to be apparent rather than the actual structure.

***Gonomyia (Lipophleps) minutistyla*, new species**

Mesonotal praescutum and scutal lobes brownish black, posterior sclerites of notum variegated brown and yellow; halteres light brown, wings tinged with brown; male hypopygium with dististyle terminal, very small, subequal in length and breadth, shorter than the modified setae; phallosome with two major elements, the longer one spearlike with the outer slightly more thickened.

MALE. Length about 3.5 mm; wing 3.7 mm.

Rostrum light yellow, mouthparts brownish black, palpi black. Antennae black throughout. Head dark gray.

Pronotum yellow. Mesonotal praescutum and scutal lobes uniformly brownish black, central region of scutum yellow; scutellum yellow, with a darkened basal spot; mediotergite brownish black, anterior two-thirds of lateral border and the pleurotergite yellow. Pleura brown, dorsopleural region and a conspicuous ventral stripe light yellow. Halteres light brown. Legs with coxae yellowed; trochanters pale brown; remainder of legs dark brown. Wings tinged with brown, without stigma; veins brown. Venation: Sc_1 ending just before origin of Rs ; $m-cu$ at fork of M .

Abdomen dark brown, hypopygium brownish yellow. Male hypopygium with spinous armature of tergite abundant but relatively slender. Dististyle terminal, very small, its length and breadth subequal, shorter than the terminal modified setae. Phallosome with two major elements, the longer one spearlike, its outer half slightly thickened, tip acute; second element with basal half dilated, the outer half a slender spine; at base of phallosome a small triangular plate terminating in a darkened knob.

Holotype male, Grand Etang, Grenada, September 21, 1967 (Noel L. H. Krauss).

The most similar regional species include *Gonomyia (Lipophleps) haploa* Alexander and *G. (L.) maya* Alexander, which differ especially in details of hypopygial structure. The dististyle of the present fly is the smallest of any of the known members of the group.