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NEW SPECIES OF CRANE-FLIES FROM SOUTHERN  
INDIANA

BY CHARLES P. ALEXANDER

During June, 1921, J. Speed Rogers and the writer spent two weeks in making a survey of the Tipulid fauna of southern Indiana, devoting especial attention to the remarkable fauna of Jefferson County in the vicinity of Hanover. The complete list of crane-flies secured upon this trip will be recorded in another paper. The types of the new species described herein are preserved in the writer's collection, allotypes and paratypes in the collections of the Museum of Zoology of the University of Michigan.

*Erioptera (Acyphona) indianensis*, sp.n.

Mesonotal praescutum obscure yellow with four brown stripes; pleura silvery gray, delimited by narrow, dark brown, longitudinal stripes; each femur yellow with a single, sub-terminal, dark brown ring; wings yellow, the brown pattern very restricted; abdomen dark brown; hypopygium with the gonapophyses very slender, curved to the acute tips.

*Male*.—Length, 3.8 mm.; wing, 4.8 mm.

*Female*.—Length, 4.5 mm.; wing, 5.3 mm.

Rostrum and palpi dark brown. Antennae light yellow, the terminal half of the segments infuscated. Head obscure yellow, the center of the vertex darkened.

Mesonotal praescutum obscure yellow with four brown stripes, the intermediate pair narrowly separated anteriorly, confluent near the suture; tuberculate pits situated one on either side of this pale median vitta; scutum pale, the lobes darker; scutellum testaceous. Pleura silvery gray with a narrow, brown, dorsal, longitudinal stripe; mesosternum brown, these two brown lines thus appearing to enclose a broad silvery gray stripe; dorso-pleural membrane gray. Halteres pale yellow. Legs yellow; femora with a single, dark brown, subterminal ring of moderate width; tips of tibiae and metatarsi very narrowly darkened; terminal tarsal segments darkened. Wings light yellow with a restricted brown pattern, this including a narrow band along the cord; small but conspicuous spots near the wing-root, at origin of *Rs*, at *Sc2* and at the tips of the longitudinal veins. Venation: *m* at or beyond midlength of *M3*.

Abdomen dark brown, the hypopygium obscure yellow. Male hypopygium as in *E. armillaris* and *E. graphica*, but the gonapophyses much longer, more slender and pointed, and with the apices very strongly arcuated and recurved.

*Holotype*, male, Corydon, Harrison County, Indiana, June 18, 1921 (Alexander).

*Allotopotype*, female (Rogers).

*Paratopotypes*, 3 males (Alexander and Rogers).

The types were swept from beds of *Dianthera* in Little Indian Creek. *E. indianensis* is allied to the larger *E. sparsa* Alex. (California).

**Gonomyia (Gonomyia) bidentata**, sp.n.

Allied to *G. subcinerea* Osten Sacken; rostrum orange; thoracic pleura with a brown spot on the mesepisternum; halteres elongate; wings long and narrow, cell *2nd A* narrow; male hypopygium with the dorsal pleural appendage terminating in a chitinized blade that is bidentate apically; gonapophyses slender, straight.

*Male*.—Length, 4.2 to 4.5 mm.; wing, 5.5 to 5.6 mm.

*Female*.—Length, 4.8 to 5 mm.; wing, 5.4 to 5.6 mm.

Rostrum orange; palpi dark brown. Antennae dark brown throughout. Head gray, the occiput paler.

Pronotum obscure yellow, the scutellum brownish medially. Mesonotal praescutum obscure yellow with three nearly confluent dark brown stripes; pseudosutural foveae conspicuous; scutum brown, obscure yellow medially and laterally; scutellum brown, the posterior margin obscure yellow; postnotum brown medially, the lateral sclerites yellowish. Pleura yellow, whitish pollinose; propleura darkened; an incomplete, dorsal, longitudinal brown stripe indicated as a more or less conspicuous spot on the mesepisternum; a less distinct darkening on the mesosternum, the pale area between these two latter appearing as a white stripe. Halteres very elongate, dark brown, the extreme bases pale. Legs with the coxae whitish yellow; trochanters yellow; remainder of the legs brown. Wings grayish subhyaline, highly iridescent; stigma pale brown; veins dark brown. Wings long, strongly narrowed basally. Venation: *Sc1* ending about opposite or just beyond the origin of *Rs*, *Sc2* close to the tip of *Sc1*, its position slightly variable; basal deflection of *R4+5* very short to entirely obliterated; cell *1st M2* closed; basal deflection of

*CuI* close to the fork of *M*, in most cases at or immediately beyond this fork.

Abdominal tergites dark brown; sternites yellow or brownish yellow, the subterminal segments especially darkened. Male hypopygium with the pleurites moderately stout, the outer caudal angle produced caudad into a short, cylindrical lobe; two pleural appendages, the ventral appendage elongate, fleshy, with the long apex obliquely truncated, the proximal face not setigerous; dorsal pleural appendage a triangular fleshy lobe, the cephalic portion produced proximad into setigerous beak, the caudal angle produced into a conspicuous blackened blade that is directed dorsad, the apex shallowly two-toothed. Penis-guard straight, comparatively slender, the apex truncated; before the apex on the ventral face with a conspicuous subapical spine. Gonapophyses straight, slender, broad at the base, the extreme tip of each produced into a small, pale spine.

*Holotype*, male, Clifty Ravine, near Hanover, Jefferson County, Indiana, June 15, 1921 (Alexander).

*Allotopotype*, female.

*Paratopotypes*, 40 males and females (Alexander and Rogers).

***Gonomyia (Gonomyia) armigera*, sp.n.**

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

Closely related to *G. florens* Alexander, differing as follows:

Longitudinal pleural pale stripe slightly wider and less tinged with yellow.

Male hypopygium with the dorsal pleural appendage not conspicuously dilated basally, gradually narrowed into the comparatively short but stout stem, this provided with from

eight to ten setigerous punctures; the head of this appendage is dilated into a roughly semicircular blade, the proximal angle or "toe" of which bears two strong setae, the apex one large and one small seta, the lateral angle or "heel" of the blade a single powerful seta. At the base of this appendage at the caudal lateral angle of the pleurite is a small, cylindrical, setiferous lobe and a short chitinized horn. The third appendage is the longest and is fused basally with the dorsal appendage, deeply constricted beyond the base, more slender than in *florens*, gradually narrowed to the short but powerful apical spine. The second appendage appears as an elongate, sinuous, chitinized blade that is constricted at near two-thirds to three-fourths its length, beyond this point tapering into a long, sickle-shaped blade; in *florens* this appendage is stouter, not sinuous, the apex not produced into a blade. Gonapophyses appearing as two long, chitinized spikes, directed dorsad, these much larger and more powerful than in *florens*.

*Holotype*, male, swept from beds of *Dianthera* in Little Indian Creek, Corydon, Harrison County, Indiana, June 18, 1921 (Alexander).

*Paratopotypes*, 3 males (Alexander and Rogers).

***Teucholabis complexa immaculata*, subsp. n.**

Very similar in all respects to *T. complexa* O. S., differing as follows:

Mesonotum shiny reddish, unmarked with darker. Pleura obscure yellow, the dorsal brown stripe in *complexa* represented only by a large rounded spot cephalad of the wing-root. Brown femoral tips broader and more gradually darkened.

Abdomen lighter colored; sixth sternite with a large rounded black spot; seventh sternite with two smaller black spots.



*Holotype*, male, Hensler's Woods, near Hanover, Indiana, June 14, 1921 (Alexander).

*Allotopotype*, female (Rogers).

*Paratopotypes*, 5 males (Alexander and Rogers); *paratype*, 1 male, at mouth of Wyandotte Cave, Crawford County, June 19, 1921 (Alexander).

Further studies may show this race to represent a distinct but closely allied species.

*Oropeza rogersi*, sp.n.

Size small (length of male under 8.5 mm.); praescutal stripes reddish brown, the median stripe split by a darker brown line; pleura yellow; legs brown; abdominal segments yellowish brown, the subterminal segments darkened, the posterior margins of the tergites narrowly dark brown.

*Male*.—Length, 7.5 to 8.3 mm.; wing, 8.5 to 9 mm.

*Female*.—Length, 10 mm.; wing, 9 mm.

Frontal prolongation of head testaceous, darker above; palpi brown. Antennal scape and first flagellar segment yellowish testaceous; remainder of flagellum brown. Front pale, the vertex brown.

Mesonotal praescutum obscure yellow with three reddish brown stripes, the median stripe more or less distinctly split by a capillary dark brown line; scutal lobes brown; scutellum and postnotum brownish testaceous. Pleura yellow, unmarked. Halteres brown. Legs with the coxae yellow; trochanters testaceous; remainder of the legs brown, the tarsi not brightened. Wings with a brown tinge, the stigma darker brown; a conspicuous oblitative area before the stigma, extending into cell 1st *M*<sub>2</sub>; veins brown. Venation: *Rs* longer than the petiole of cell *M*<sub>1</sub>.

Abdominal tergites light yellowish brown, the posterior margins of the segments very narrowly ringed with dark brown; segments four to eight, indistinctly darkened; sternites more uniformly yellowish. Male hypopygium with the pleural appendages black.

*Holotype*, male, Hensler's Woods, near Hanover, Indiana, June 16, 1921 (Alexander).

*Allotopotype*, female, June 14, 1921 (Alexander).

*Paratopotypes*, 8 males (Alexander and Rogers).

*Oropeza rogersi* is the smallest species of the genus so far discovered. It is allied to *O. dorsalis* Johnson. It is with great pleasure that this interesting fly is dedicated to my friend, J. Speed Rogers, who has done so much to make known the Tipulid fauna of Indiana, Iowa, and Michigan.