

Undescribed Species of Crane-flies from the
Eastern United States and Canada
(Dipt.: Tipulidae). Part IX

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The preceding part under this general title was published in ENTOMOLOGICAL NEWS, 55: 125-129, 1944. At this time I am discussing three interesting crane-flies, one of which I collected at high altitudes in the Black Hills, South Dakota, where there is a surprising union of characteristic eastern types of Tipulidae with fewer forms that are typical of the Rocky Mountains and westward. A second species was collected by Dr. Victor E. Shelford and was included in materials sent to me for confirmation of identification by Dr. Alan Stone. The third fly resulted from extensive collections made at Camp Claiborne, Louisiana, by Major Emory Burgess. I am greatly indebted to all of these entomologists for the opportunity of naming these interesting flies. Except where stated to the contrary, the types of the novelties are preserved in my collection.

Dolichopeza (Oropeza) dakota new species

Allied to *venosa*; mesonotal praescutum and scutum, with the thoracic pleura, conspicuously patterned with black; knobs of halteres infuscated; tarsi brown; wings infumated, patterned with darker, including the conspicuous dark brown stigma; costal border weakly darkened; a broad seam along vein *Cu*, particularly in cell *Cu*₁; *Rs* oblique, *Sc*₂ ending about opposite one-fourth to one-fifth its length; petiole of cell *M*₁ shorter than *m*; abdominal tergites obscure yellow on sides, broadly blackened medially, sternites blackened on more than the basal half, the posterior borders broadly yellow.

♀. Length about 12 mm.; wing 11.5 × 3.3 mm.

Frontal prolongation of head brownish gray, sparsely pruinose, provided with scattered long yellow setae; palpi yellowish brown. Antennae with scape and pedicel testaceous yellow, flagellum black; first flagellar segment (female) elongate, nearly as long

as the succeeding two taken together, constricted at near mid-length; remaining segments subcylindrical, their verticils chiefly unilateral in distribution. Head with front buffy yellow, with a small brown median spot before the antennal fossae; posterior portion of head brownish gray.

Pronotum obscure brownish yellow, more infuscated medially. Mesonotal praescutum with the ground color brownish gray, with three entire black stripes; scutal lobes each with a conspicuous black central area; median region of scutum, at and behind the suture, with a black line; scutellum medium brown, the sides more yellowed, parascutella infuscated; mediotergite medium brown; pleurotergite testaceous yellow. Pleura yellow, heavily patterned with dark brown, sparsely pruinose; the chief dark areas appear as major marks on the anepisternum, ventral sternopleurite and meron; dorsopleural membrane pale. Halteres yellow, base of stem more brightened, knob weakly infuscated. Legs with the coxae yellow, the fore and middle pair slightly more infuscated on outer faces; trochanters yellow; remainder of legs light brown or yellowish brown, the tips of femora and tibiae narrowly brownish black; tarsi brown. Wings relatively short and broad; ground color infumated, patterned with darker, including the short-oval dark brown stigma; cells *C* and *Sc* darker brown than the ground; a brown seam along vein *Cu*, as in *venosa*, chiefly in cell *Cu*₁ but slightly encroaching on cell *M*; veins beyond cord and 2nd *A* less evidently bordered by brown, the latter most distinct; veins brown. Venation: *Sc*₂ entering *R*₁ about opposite one-fourth to one-fifth the length of the oblique *Rs*, *Sc*₁ far from its tip; *Sc*₂ alone exceeding one-half the length of *Rs*; petiole of cell *M*₁ short, about one-third to nearly one-half *m*.

Abdominal tergites obscure yellow on sides, broadly and conspicuously blackened medially; the yellow coloration becomes more extensive behind so the posterior portions of the segments are chiefly pale; sternites broadly blackened on about the basal two-thirds, the posterior borders broadly yellow; genital shield blackened; cerci compressed, horn-yellow, the upper edges blackened.

Habitat.—SOUTH DAKOTA. *Holotype*: ♀, Harney Peak, Black Hills, altitude 6,700 feet, July 15, 1942 (C. P. Alexander). The fly was captured along a small stream about midway between Sylvan Lake and the summit of Harney Peak, in a dense growth of Western White Spruce.

The closest relative of the present fly is *Dolichopeza (Oropeza) venosa* (Johnson), a characteristic fly of northeastern North America, that has been recorded from as far west as Michigan. The present insect differs from *venosa* in various regards of coloration of the wings and body, and in the venational details, such as the longer, more oblique *Rs*, with *Sc*₂ some distance beyond its origin; the stigma is smaller so the pale coloration of cell *R*₁ at its anterior end is much more extensive. The discovery of the male sex will almost certainly provide additional and even stronger specific characters. The subgenus *Oropeza* Needham is well-distributed over entire eastern North America but to this date no species had been discovered farther west than Minnesota.

Limonia (Limonia) shelfordi new species

Similar in general appearance to *fusca*; general coloration black, the surface more or less polished; rostrum and antennae black throughout, the flagellar segments with very long verticils; halteres elongate, black, the extreme base of stem yellow; legs brownish black, the tarsal segments paler, obscure brownish yellow; wings with a strong blackish suffusion, without a stigma; abundant macrotrichia in cells of outer fourth of wing; *Sc* relatively long, ending opposite two-thirds to three-fourths *Rs*; *R*₁₊₂ and *R*₂₊₃ subequal; abdomen black, the intermediate segments with their posterior borders obscure yellow; male hypopygium of very peculiar structure; a single dististyle, more or less quadrate in outline, bearing a slender blackened rod or style, the mesal face of main body produced into an outer slender lobe and a stouter more cephalic one, the latter bearing a tubercle with four long setae; gonapophyses with mesal-apical lobe long and nearly straight.

♂. Length about 7.5 mm.; wing 8–8.5 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments subcylindrical to elongate-oval, with distinct apical necks and much shorter similar basal pedicels; verticils unusually long and conspicuous, the longest (at midlength of organ) fully three times the segment; terminal segment elongate, nearly twice the penultimate. Head dull black; anterior vertex relatively wide, about two and one-half times the diameter of scape.

Thorax brownish black to black, without definite pattern, the surface subnitidous. Halteres elongate, black, the extreme base of stem yellow. Large brownish black, the tarsal segments paler obscure brownish yellow. Wings with a strong blackish suffusion, the prearcular and costal fields slightly more darkened; no stigmal area; veins darker brown than the ground. Numerous macrotrichia in cells of outer fourth of wing, involving cells Sc_1 to M_4 , inclusive, especially abundant in the outer portions of cells. Venation: Sc relatively long, Sc_1 ending about opposite two-thirds to three-fourths Rs , Sc_2 near its tip; Rs long, approximately three to four times the basal section of R_{4+5} ; vein R_2 faint, R_{1+2} extending far beyond it so R_{1+2} and R_{2+3} are subequal in length; cell 1st M_2 relatively short-rectangular, shorter than any vein beyond it; $m-cu$ close to fork of M .

Abdomen in part bicolored, black, the caudal third to fourth of the intermediate segments obscure yellow or brownish yellow, the outer segments uniformly blackened. Male hypopygium of entirely different structure from that of *fusca*. Ninth tergite transverse, occupying the entire width of abdomen, the caudal margin truncated or nearly so, with three groups of elongate black setae, the median area more extensive. Basistyle stout, its ventromesal lobe low and rounded, with numerous very long setae. Dististyle much smaller in total area than the basistyle, of irregular conformation; in general, the shape is quadrate, bearing on the face a long, nearly straight, black rod that is presumably homologous with the dorsal dististyle of *Dicranomyia* species, this acute at tip; main body of style with scattered long erect setae; rostral portion a slender delicate lobe that gradually narrows outwardly; also on mesal face a shorter obtuse lobe that bears a tubercle with about four long spinous setae forming a

sparse pencil. Gonapophysis with mesal-apical lobe long and nearly straight, slender. Aedeagus straight, the caudal margin very gently emarginate, the outer lateral angles produced into pale, inwardly-directed points.

Habitat.—WEST VIRGINIA, KENTUCKY. *Holotype*: ♂, Olive Hill, Carver's Cave, KENTUCKY, in mixed hardwoods, August 5, 1943; Shelford's No. S 1837; United States National Museum. *Paratype*: Broken, sex?, Cheat Range, Durbin, WEST VIRGINIA, in basswood-maple growth, August 2, 1943; Shelford's No. S 1467; Alexander Collection.

I take particular pleasure in naming this distinct fly for the collector, Dr. Victor E. Shelford, to whom I am indebted for many kindnesses while at the University of Illinois, 1919–1922, and to whom all entomologists are indebted for his supervision of the master work "Naturalist's Guide to the Americas," 1926.

The only other regional crane-fly of similar appearance is *Limonia (Limonia) fusca* (Meigen), with a very extensive range throughout the Holarctic Region. Both species have the same blackened body and appendages, and with numerous macrotrichia in the outer cells of the wing. In *fusca*, the venation is quite distinct, with R_2 close to the tip of the vein and in approximate alignment with the free tip of Sc_2 , while the male hypopygium differs in all regards of structure. The present fly may well be the same species mentioned but not described by Rogers from the George Reserve, Livingston Co., Michigan (Mus. Zool., Univ. Michigan, Misc. Pub. 53: 80–81; 1942).

Gonomyia (Lipophleps) burgessi new species

Size medium (wing, male, 4 mm.); general coloration of body light brown and sulfur yellow; white pleural stripe conspicuous, bordered both above and beneath by dark brown; legs brownish black to black; wings tinged with brown, the prearcular and costal fields yellow; R_s unusually long, nearly equal to its anterior branch; cell 1st M_2 strongly widened outwardly, its breadth across outer end approximately two-thirds M_{3+4} ; abdominal tergites light brown, the lateral borders yellow; male hypopygium with the outer lobe of basistyle elongate, constricted

at near midlength, provided with relatively few setae of moderate length; outer dististyles appearing as symmetrical, very long, curved spines that gradually narrow to their tips; phallosome with paired blades, the long outer pair only a trifle widened at tip.

♂. Length about 3.5 mm.; wing 4 mm.

Rostrum and palpi black. Antennae with scape yellow above, blackened beneath; flagellum black, with the usual elongate verticils. Head light sulfur yellow, the central portion of vertex more infuscated.

Pronotum and pretergites light sulfur yellow. Mesonotal praescutum yellowish brown with three darker brown stripes, the humeri and broad lateral borders light yellow; scutum broadly yellow medially, the lobes patterned with reddish brown; scutellum yellow with a conspicuous brown central spot at base; mediotergite yellow on anterior portion, with a darkened area at cephalic border; posterior portion more reddish yellow, infuscated medially; pleurotergite reddened ventrally, yellow above. Pleura with a broad whitish longitudinal stripe extending from and including the fore coxae, crossing the ventral pleurites to the abdomen, passing beneath the halteres, bordered both above and below by dark brown; remainder of pleura and sternum paling into medium brown. Halteres yellow. Legs with the coxae yellow, the fore pair more whitened; middle coxae slightly darkened at base; remainder of legs passing through brownish black to black. Wings with a rather strong brownish tinge, the prearcular and costal fields yellow; stigma long-oval, very slightly darker brown; veins pale brown, more yellow in the brightened areas. Venation: *Sc* relatively long, *Sc*₁ ending a short distance before origin of *Rs*, *Sc*₂ at its extreme tip; *Rs* unusually long when compared with related species, only a little shorter than its anterior branch, the latter without trichia; in one wing of type, basal section of *R*₅ angulated and weakly spurred at near midlength, in opposite wing straight; *m-cu* about one-fourth its length before fork of *M*; cell *1st M*₂ strongly widened outwardly, its breadth across outer end approximately two-thirds *M*₃₊₄.

Abdominal tergites light brown, narrowly darker medially, the lateral borders yellow; sternites clearer yellow; hypopygium brownish yellow. Male hypopygium with the outer lobe of basistyle unusually slender, more or less constricted at midlength to appear weakly bulbous; setae of apex and outer margin few in number, as compared with allied forms, the mesal face glabrous. Outer dististyle a long curved black spine that narrows very gradually to the needle-like tip; styles of the two sides symmetrical. Inner dististyle much longer than in *producta*, about two-thirds as long as the lobe of the basistyle, with a single fasciculate seta. Phallosome with the apical blades paired, symmetrical, elongate, their apices broadly obtuse and only a trifle dilated.

Habitat.—LOUISIANA. *Holotype*: ♂, Camp Claiborne, April 14, 1942, at light (Emory Burgess).

This interesting fly is named in honor of the collector, Major Emory Burgess, who was in charge of insect control at Camp Claiborne between 1941 and 1944. The only near relatives are the Tropical American *Gonomyia* (*Lipophleps*) *producta* Alexander and *G. (L.) prolixistylus* Alexander, which have the general structure of the phallosome the same and are entirely different from the superficially similar *G. (L.) puer* Alexander. The present fly is well-distinguished by the coloration of the body and wings; the venation, as the long *Rs* and strongly widened cell *1st M*₂; and by the structure of the male hypopygium, particularly the lobe of the basistyle and both dististyles.