

# The Great Basin Naturalist

PUBLISHED AT PROVO, UTAH BY  
BRIGHAM YOUNG UNIVERSITY

VOLUME XXV

December 31, 1965

Nos. 3-4

## UNDESCRIBED SPECIES OF NEARCTIC TIPULIDAE (DIPTERA) VI.

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In the present paper I am describing three species of the genus *Tipula* Linnaeus and a single species of *Limonia* Meigen. All types of the novelties are preserved in my personal collection through the kindness of the individual collectors of the materials, Mr. James H. Baker of Baker, Oregon, Mr. W. E. Simonds of Sacramento, California, and the late Robert R. Dreisbach of Midland, Michigan.

### *Tipula* (*Nippotipula*) *metacomet*, n.sp.

The present fly has been confused with *Tipula* (*Nippotipula*) *abdominalis* (Say) which it closely resembles but from hypopygial structure evidently is distinct. In size somewhat smaller than *abdominalis* (wing 23 mm.). Legs uniformly brownish black with no indication of pale rings on the femora or bases of tibiae. Male hypopygium with both dististyles black, outer style with the basal part before the oblique thickened ridge short, the outer half or more slightly angulated and produced into a rectangular blade, its apex truncate, with short spinoid setae; inner style much smaller, the base enlarged, outer end suddenly narrowed into a slender blackened club, the simple apex without major setae. In *abdominalis* the outer dististyle is roughly oval in outline, the oblique ridge beyond midlength, restricting the outer part to a smaller semioval lobe with abundant spinoid setae; inner style relatively large, the pale apex dilated, more or less bilobed, with several strong setae, at base of style with a pale blade or flange.

HABITAT.—Massachusetts (Hampshire County).

HOLOTYPE, ♂, Amherst, August 15, 1945 (Charles P. Alexander); type mounted on two microscope slides.

Named for Metacomet, more commonly known as King Philip, second son of Massasoit of the Wamponoag tribe of New England Amerinds. King Philip's War (1675-1676) with the English colonists was waged in the vicinity of the type locality.

1. Amherst, Massachusetts.



*Tipula (Lunatipula) mercedensis*, n.sp.

Allied to *degeneri*; male hypopygium with posterior border of tergite narrowly emarginate; inner dististyle with the beak bilobed, dorsal crest narrow, blackened, with long setae; outer basal lobe a powerful curved arm that narrows into a strong spine, the upper surface of arm with exceedingly long yellow setae.

MALE.— Length about 18.5 mm.; wing 17 mm.; antenna about 6.5 mm.

Frontal prolongation of head long, nearly equal to remainder of head, yellow, narrowly dusted with light gray above, nasus long; palpi with proximal three segments yellowed, the fourth brownish black. Antennae elongate; scape, pedicel and most of first flagellar segment yellow, the remainder black; flagellar segments strongly incised, producing a conspicuous outer enlargement, subequal in size to the basal swelling; segments slightly exceeding their longest verticils. Head brownish gray, orbits paler gray; occipital region buffy.

Pronotal scutum gray, scutellum yellow. Mesonotal praescutum gray with four entire light brown stripes, the intermediate pair slightly more cinnamon brown than the laterals; posterior sclerites of notum gray, each scutal lobe with two brown areas, mediotergite with a capillary brown central vitta. Pleura gray, dorsopleural membrane yellowed. Halteres with stem whitened, the base more yellowed, knob brown. Legs with coxae light gray; trochanters yellow; remainder of legs yellow, the tarsi passing through brown to black; claws of male toothed. Wings brownish yellow, prearcular and costal fields clearer yellow, stigma a little darker, brownish yellow; obliterative areas poorly differentiated; veins brown. Venation: Tip of  $R_{1+2}$  atrophied; petiole of cell  $M_1$  slightly longer than  $m$ .

Abdominal tergites yellow with a broad blackened central stripe, the posterior borders of the intermediate segments narrowly yellowed, sublateral areas very vaguely darkened; sternites yellow; hypopygium large, brownish yellow. Male hypopygium with posterior border of tergite narrowly and deeply emarginate, fringed with long setae, the border adjoining the emargination produced into a flattened blade. Appendage of ninth sternite dilated and weakly emarginate, the border with strong yellow setae, those of upper lobe stouter. Basistyle produced virtually as in *degeneri*. Inner dististyle with the beak bilobed, dorsal crest low, blackened, with long yellow setae; outer basal lobe produced into a powerful curved arm, its tip narrowed outwardly into a strong spine; upper or concave surface of the arm with exceedingly long yellow setae from base almost to the terminal spine; no basal dilation as in *degeneri*. Eighth sternite sheathing, posterior border broadly concave on either side with an apical lobe provided with abundant long yellow setae, the tips curved and twisted, the shorter mesal setae forming a dense tangle.

HABITAT.— California (Mariposa County).

HOLOTYPE, ♂, Yosemite National Park, along Merced River, trail to Vernal Falls, altitude about 4,200 feet, June 12, 1963 (James Baker).



The only known relative of this fly is *Tipula* (*Lunatipula*) *degeneri* Alexander, still known only from Sequoia National Park, California. The present species differs conspicuously in the hypopygial characters, particularly the ninth tergite and the inner dististyle, as described. In *degeneri* the outer basal lobe of the inner style is expanded at base, the outer arm slender and without setae.

*Tipula* (? *Pterelachisus*) *simondsi*, n.sp.

Wings reduced in size, at least in the female; general coloration of head and thorax light gray, frontal prolongation of head elongate, with a nasus; mesonotum restrictedly patterned with brown; halteres chiefly pale yellow; wings about one-half the length of body, stenopterous, pale yellow, conspicuously patterned with dark and paler brown, veins behind *R* without macrotrichia; abdomen tricolored, segments dark brown basally, light gray on more than outer half, the posterior borders of outer segments narrowly light yellow; ovipositor with cerci smooth, hypovalvae elongate, with rounded apices.

FEMALE.— Length about 23 mm.; wing 11 x 2 mm.; abdomen about 18 mm.; antenna about 2.5 mm.

Frontal prolongation of head unusually long, only a little less than remainder of head, light gray, with indications of a narrow darker median line; nasus distinct, about twice as long as broad, with a few stout black setae; palpi black, sparsely pruinose. Antennae black, pruinose; 12-segmented, the proximal two flagellar segments partially fused, the combined length only a little less than the scape, terminal segment reduced to a tiny oval structure; verticils a little shorter than the segments. Head gray, the vertex with vague indications of a capillary darkened line, more diffuse behind; vestiture of head reduced to a few scattered microscopic black bristles.

Cervical region buffy. Pronotum gray, center of scutum elevated, slightly more infuscated. Mesonotum gray, praescutum with indications of two darkened lines on anterior half, converging behind and vaguely reaching the suture, evidently representing the usual interspaces, the four gray stripes including two narrow intermediate vittae and much broader lateral areas; pseudosutural foveae very small, blackened; scutum gray, more buffy medially, each lobe with narrow darkened lines; scutellum and postnotum light gray, vaguely patterned with darker; mesonotum glabrous. Pleura gray, dorso-pleural membrane abruptly light yellow. Halteres pale yellow, base of knob weakly darkened. Legs with coxae light gray, with sparse long white setae; trochanters brownish gray; femora and tibiae light yellowish brown, tips narrowly brownish black; basitarsi brown, outer tarsal segments blackened. Wings slightly reduced in size, stenopterous, to produce an evidently flightless condition; wings of nearly uniform width for most of the length; ground color pale yellow, restrictedly patterned with dark and paler brown; prearcular and costal fields, including both cells *C* and *Sc*, clear light yellow; the darker brown areas include marks at arculus, origin of *Rs* and the anterior cord; paler brown markings include a linear dash in cell



*R* adjoining the vein, and broad areas in cell *M* placed at midlength and near outer end; further linear pale brown lines at midlength and near outer ends of cells *Cu* and 1st *A*, and almost the outer two-thirds of 2nd *A*; beyond the cord,  $M_{1+2}$  is narrowly seamed with brown; veins light yellow in the ground areas, pale brown in the darker brown markings. Macrotrichia on veins *C*, *Sc* and *R*, lacking on all other veins; squama naked. Venation: *Rs* about one-half longer than *m-cu*; veins  $R_{1+2}$  and  $R_3$  widely divergent, cell  $R_2$  at margin about twice  $R_3$ ; petiole of cell  $M_1$  short, about one-third *m*; *m-cu* longer than distal section of  $Cu_1$ ; prearcular field of wing elongate.

Abdomen long, the segments conspicuously patterned, the basal rings dark brown, the broader apical parts light gray; posterior borders of tergites five through eight and sternites six and seven narrowly light yellow; ovipositor with dorsal shield and the cerci brownish black, the ventral parts slightly paler. Ovipositor with cerci elongate, margins smooth, apices subacute; hypovalvae about four-fifths as long, compressed-flattened, tips obtuse.

HABITAT.—California (Inyo County).

HOLOTYPE, ♀, on snow field along trail to Mount Whitney, Sierra Nevadas (Lone Pine to Whitney), altitude 12,500 feet, July 18, 1965 (W. E. Simonds).

I am pleased to name this interesting fly for the collector, Mr. William E. Simonds of Sacramento, California. In the absence of the male sex I hesitate to assign it definitely to any subgenus but am placing it with some question in *Pterelachisus* Rondani (*Oreomyza* Pokorny) where it appears to belong. It may possibly belong to *Serratipula* Alexander which includes various subapterous species. Other regional subgenera are excluded by different characters, as *Lindneria* Mannheims by the loss of the nasus, and *Lunatipula* Edwards and *Triplicitipula* Alexander by the presence of squamal setae. I cannot associate the present female with any of the numerous regional fully winged males. The striking tricolored pattern of the abdomen is somewhat suggestive of *Tipula* (*Pterelachisus*) *ternaria* Loew, which is fully winged in both sexes. This is a high northern Nearctic fly that ranges from Ontario to Quebec, westward to the Yukon, southwards into the more northern New England states. It is probable that the male sex of the present species likewise will be found to be fully winged.

Subapterous species of *Tipula* are well known in California, including several species in *Serratipula* and *Triplicitipula*, including the female sex and in a few cases also the male. As indicated above, the present fly has the reduced condition of the wings only moderate. By the scale of wing atrophy given by Bezzi in an important paper on the subject<sup>1</sup>, the fly would fall between his categories 1 and 2 where the wing shape has been deformed but the venation clearly indicated. Attention may be called to a very recent paper by the

1. Bezzi, Mario. Riduzione e scomparse delle ali negli insetti Ditteri. *Rivista di Scienze Naturali*, "Natura", 7:85-182, 10 figs., with numerous subfigures; 1916.



writer that concerns the Californian species of *Tipula* and bears on the present question; reference<sup>2</sup> below.

*Limonia (Dicranomyia) dreisbachi*, n.sp.

General coloration of head and thorax gray, the praescutum with a dark brown central stripe on anterior half; antennae black throughout; wings whitish hyaline, stigma pale yellow; *Sc* short, *Rs* less than the basal section of  $R_{4+5}$ , cell 1st  $M_2$  closed; male hypopygium with the rostral prolongation of the ventral dististyle long, spines subequal in length, placed close together at near two-thirds the length.

MALE.—Length about 6.5 mm.; wing 7 mm.

Rostrum yellow, sparsely pruinose above the base, palpi black. Antennae black throughout; flagellar segments oval, the outer ones slightly more elongate; verticels shorter than the segments. Head gray; anterior vertex broad, about three times the diameter of scape.

Pronotum buffy yellow. Mesonotal praescutum dark gray, clearer light gray on sides; a conspicuous dark brown central stripe on anterior half, lateral stripes not or scarcely indicated; scutum gray, lobes darker gray; scutellum dull yellow, sparsely pruinose at base; postnotum gray. Pleura gray, dorsal pteropleurite and meral region buffy; dorsopleural membrane brownish yellow. Halteres with stem whitened, knob brown. Legs with coxae and trochanters yellow; remainder of legs broken. Wings whitish hyaline, prearcular field light yellow; stigma vaguely indicated, pale yellow; veins delicate, brown, those of proximal third of wing more yellowed. Venation: *Sc* short,  $Sc_1$  ending some distance before origin of *Rs*, the distance exceeding *Rs*,  $Sc_2$  retracted,  $Sc_1$  alone more than three-fourths *Rs*; *Rs* shorter than basal section of  $R_{4+5}$ ; cell 1st  $M_2$  closed, nearly as long as distal section of  $M_{1+2}$ ; *m-cu* longer than outer section of  $Cu_1$ , placed shortly beyond the fork of *M*.

Abdomen dark brown, hypopygium yellowed. Male hypopygium with the tergite transverse, posterior border shallowly emarginate to form low obtuse broadly thickened lobes, setae long, pale yellow, inconspicuous. Basistyle with ventromesal lobe oval, with long yellow setae. Dorsal dististyle a gently curved rod that narrows gradually to a slender point; ventral style subequal in area to the basistyle, body oval, with pale setae; rostral prolongation long, the apex narrowed, the two spines placed close together at near two-thirds the length, the spines subequal to the apex beyond their insertion. Gonapophysis with mesal-apical lobe slender, gently curved.

HABITAT.—Michigan (Midland County):

HOLOTYPE, ♂, Midland County, without more exact data, August 4, 1954 (R. R. Dreisbach).

The species is dedicated to the collector, the late Robert R. Dreisbach, distinguished student of the Hymenoptera. Superficially it is much like *Limonia (Dicranomyia) brevivena* (Osten Sacken) in the venation, as the short *Sc* and *Rs* but actually is a very different fly.

2. Alexander, Charles P. New subgenera and species of crane-flies from California (Diptera: Tipulidae). *Pacific Insects* 7, no. 2:333-386, 33 figs.: June 1965.



Alexander, Charles P. 1965. "Undescribed species of Nearctic Tipulidae (Diptera). VI." *The Great Basin naturalist* 25, 49–53.

<https://doi.org/10.5962/bhl.part.1713>.

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