

New Species of Crane-Flies from the United States and Canada

(*Tipulidae*, *Diptera*)

Part II

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The preceding part under this general title was published in 1920 (Pomona Coll. Journ. Ent. & Zool., 12: 85-92; December 1920). In recent years a great number of undescribed species of Tipulidae have been discovered in the Rocky Mountain and Pacific Coast states and provinces. In the present report I am discussing certain species that were collected by Messrs. Aitken, Cazier, Cockerell, Melander, Scullen and Zukel, as is discussed under the various species. Except where stated to the contrary, the types of the novelties are preserved in my personal collection. I am very greatly indebted to all of the entomologists mentioned for their continued interest in making known the very rich Tipulid fauna of Western North America.

Tipula (Arctotipula) semidea sp. n.

Size large (Wing, male, over 20 mm.); general coloration gray, the praescutum with four darker gray stripes that are narrowly bordered by brown; tips of femora broadly blackened; claws toothed; wings brownish yellow, sparsely patterned with brown; squama naked; male hypopygium with the caudal margin of the ninth tergite deeply emarginate, the superior lateral lobes thin, depressed-flattened; outer dististyle very broad, silvery; inner dististyle of simple structure.

Male.—Length about 21 mm.; wing 23.5 mm.; antenna about 5 mm.

Frontal prolongation of head light gray above; nasus very long and conspicuous; palpi brown, the terminal segment obscure yellow. Antennae of moderate length; scape yellow basally, the apical half infuscated; pedicel obscure yellow; flagellum brownish black, the bases of the proximal three or four segments yellow; flagellar segments only feebly incised, with small and ill-delimited basal enlargements; verticils very long, exceeding the segments; terminal segments more than one-half the length of the penultimate, narrowed to its tip. Head light gray, with a conspicuous median brown stripe on vertex.

Pronotum light gray on sides, more brownish gray on central portion, with a restricted, still darker median spot. Mesonotal praescutum gray, with four darker gray stripes that are narrowly bordered by brown, the narrow intermediate pair being almost entirely of this latter color; further restricted brown darkenings in humeral region, cephalad of the lateral stripes and near the sides of sclerite, behind the small black pseudosutural foveae; extreme praescutal borders brownish black; scutum light gray, each lobe with two confluent dark gray areas that are narrowly bordered by dark brown; scutellum dark gray with a median dark brown vitta that is narrowed behind; mediotergite gray, clearer behind, the cephalic half with three more or less distinct brownish clouds; posterior border of sclerite at the margin of abdomen

with a small impressed median area, triangular in outline, connected with the more anterior darkenings by a median brown vitta; pleurotergite gray, the swollen katapleurotergite darker, bordered by brown; dorsopleural membrane yellow, conspicuously patterned on its dorsal portion with dark brown. Halteres with stem yellow, knob infuscated. Legs with the coxae light gray; trochanters yellow; femora brownish yellow, the bases clearer yellow, the tips rather broadly blackened, the amount subequal on all legs; tibiae dark brown, the bases narrowly obscure yellow; tarsi black; tibial spur formula 1-?-2, the middle legs broken; claws toothed. Wings with a brownish yellow tinge, the prearcular and costal fields clearer yellow; stigma oval, dark brown; restricted brown clouds in outer radial field at near midlength; along cord, especially *m-cu*; vein *Cu*; and as even narrower seams over the outer medial and anal veins; veins brown, more brownish yellow in the brightened portions. Squama naked; macrotrichia of veins beyond cord sparse or lacking, there being none on branches of *M* or on more than the distal half of R_{4+5} . Venation: R_{1+2} entire, with trichia on proximal half; M_{3+4} short, subequal to *r-m*; type with a conspicuous spur of a vein jutting distad between veins M_2 and M_3 ; cell 2nd *A* wide.

Abdomen with basal tergite gray, trivittate with dark brown; tergites two to six, inclusive, yellow, trivittate with dark brown, this pattern interrupted at the posterior border of segments, breaking the stripes, particularly the central one; lateral tergal borders broadly pale silvery gray; sublateral brown stripes much paler than the median one, in cases almost obsolete, the broad yellow interspaces correspondingly widened; segments seven to nine, inclusive, uniformly blackened, excepting the obscure yellow tips of the tergal lobes, the reddish sternite and basistyle, and the broad silvery outer dististyle; basal sternites pale silvery white, the outer ones more grayish, the seventh and eighth sternites blackened. Male hypopygium moderately enlarged; tergite entirely separated from the sternite; basistyle relatively small but complete; ninth sternite without accessory sclerite, when viewed ventrally with a broad median area filled with membrane, this area a little constricted at near midlength; caudomesal portion of sternite produced into small lobes, on cephalic portion these latter cut off from remainder of sternite by short straight sutures. Eighth sternite relatively narrow, its caudal border entirely simple and unarmed. Ninth tergite relatively small, depressed; caudal margin with a broad and deep U-shaped notch, the yellow lateral lobes thin, depressed-flattened, their tips obtusely rounded, provided with conspicuous yellow setae; ventrad of each lateral lobe with a shorter, broader, compressed dark-colored blade or lobe, lying more nearly vertically, covered with abundant setae. Outer dististyle broadly flattened; greatest breadth about one-half the length; caudal margin fringed with long setae, those of anterior border short. Inner dististyle very simple in structure, with a small, sharp, blackened tooth at the base; apex obtuse; sensory area oval, comprised of nearly a score of pores. Gonapophyses very small and inconspicuous. Aedeagus relatively slender, terminating in two small flaps.

Habitat.—Oregon (Marion Co.)

Holotype, ♂, Silver Creek State Park, May 17, 1939 (H. A. Scullen); type in Collection of Oregon State College.

The nearest relative of the present fly appears to be *Tipula* (*Arctotipula*) *williamsiana* Alexander, of the southern Appalachian Region of eastern North America. Other allied species occur in Japan and Korea. The eastern American species differs conspicuously in the coloration, venation, and structure of the male hypopygium.

Limonia (*Dicranomyia*) *catalinae* sp. n.

General coloration gray, the praescutum with three brown stripes; antennae black throughout; halteres short, stem pale, knob infuscated; wings whitish hyaline, the stigma and very restricted seams along cord and outer end of cell *1st M*₂ darker; *Sc* short, *Sc*₂ near tip of *Sc*₁; male hypopygium with the tergite unusually narrow, its caudal margin only gently emarginate; gonapophyses with mesal-apical lobe unusually slender, blackened, microscopically roughened.

Male.—Length about 5.5 mm.; wing 6.5 mm.

Female.—Length about 7 mm.; wing 7 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments oval. Head gray; anterior vertex (male) relatively broad, a trifle less than twice the diameter of scape.

Pronotum dark gray. Mesonotal praescutum light gray, with three brown stripes; scutum gray, each lobe with a more infuscated center; scutellum gray, the posterior border narrowly more yellowed; postnotum gray. Pleura dark, heavily gray pruinose. Halteres short, stem white, knob infuscated. Legs with coxae brownish yellow; trochanters yellowish testaceous; femora and tibiae obscure yellow, their tips slightly more darkened; tarsi passing through dark brown to black. Wings whitish hyaline; stigma brown, relatively inconspicuous; very restricted dark seams along cord and outer end of cell *1st M*₂, between the branches of *Cu*, and in the base of cell *Sc*; veins brown, the base of *M* and the veins of the posterior prearcular field pale. Venation: *Sc* short, *Sc*₁ ending opposite the origin of *Rs*, *Sc*₂ close to its tip; *R*₂₊₃ and *R*₃ in longitudinal alignment, nearly straight; cell *1st M*₂ a little shorter than vein *M*₃ beyond it; *m-cu* close to fork of *M*; vein *2nd A* only gently sinuous.

Abdominal tergites dark brown, sparsely pruinose; sternites paler; eighth and ninth segments of male conspicuously pale. In female, ovipositor large and conspicuous, the bases of hypovalvae blackened. Male hypopygium with the tergite unusually narrow, its caudal margin very gently emarginate, forming unusually low lateral lobes. Basistyle with ventromesal lobe conspicuous, obtuse at apex. Dorsal dististyle a curved sickle, gradually narrowed into an acute spine. Ventral dististyle small, its beak conspicuous, blackened, the tip acute; two rostral spines placed close together, at near midlength of the prolongation, each from a small basal tubercle. Gonapophysis with mesal-apical lobe unusually slender, blackened, microscopically roughened. In *stigmata*, the tergite is even narrower, the caudal margin very gently emarginate; dorsal dististyle a longer, more nearly straight rod, its apex suddenly narrowed into a spine; ventral dististyle larger; gonapophysis with mesal-apical lobe appearing as a strong curved blackened point; eighth and ninth abdominal segments darkened.

Habitat.—California (Catalina Island).

Holotype, ♂, Avalon, March 19 (Cockerell). Allotopotype, ♀.

Among the described regional species, the present fly is closest to *Limonia* (*Dicranomyia*) *stigmata* (Doane), from which it differs chiefly

in hypopygial characters, as above indicated. In *stigmata*, the stigma of the wing is larger and fuller and there are no clearly defined darkened areas elsewhere on the wing. *L. (D.) libertoides* (Alexander) is more distantly related, differing in various hypopygial characters, especially the large ninth tergite, the caudal margin of which is narrowly and deeply emarginate, forming large, obtuse, lateral lobes.

Dactylolabis parviloba sp. n.

Allied to *knowltoni*; general coloration dark gray; praescutum with a median polished stripe that is more or less distinctly split behind, the lateral praescutal stripes and the centers of the scutal lobes not polished; male hypopygium with the setae of outer face of inner dististyle strong, erect; interbasal lobes unusually small.

Male.—Length about 7 mm.; wing 7.5 mm.

Female.—Length about 8 mm.; wing 8-8.2 mm.

Rostrum black, gray pruinose; palpi black. Antennae black throughout; flagellar segments oval, the outer ones even shorter; verticils relatively short. Head gray.

Pronotum uniformly gray. Mesonotal praescutum gray, with a central polished black stripe, narrowed and more or less distinctly split behind; lateral stripes barely indicated, not polished; posterior sclerites of notum dark gray, the centers of the scutal lobes a little more darkened but not polished. Pleura dark gray, the dorsopleural membrane concolorous. Halteres obscure yellow. Legs with the coxae obscure yellow, gray pruinose on outer faces; trochanters obscure yellow; femora and tibiae obscure yellow, their tips vaguely more darkened, particularly of the latter; tarsi black. Wings with a yellowish tinge, stigma barely differentiated; prearcular and costal fields somewhat clearer yellow; vague to scarcely evident darker seams along cord; veins dark brown, brighter in the yellowed portions. Venation: R_{2+3+4} variable in length, from subequal to R_2 (in type) to nearly three times this length; position of *m-cu* likewise variable, from opposite fork of *M* to some distance before this point; cell M_1 subequal to or longer than its petiole.

Abdominal tergites brownish black, opaque; basal sternites more piceous to deep reddish brown, with blackened posterior borders, their surface more nitidous; outer sternites more uniformly darkened; hypopygium chiefly yellow, the basistyles and outer dististyles slightly more infuscated. Male hypopygium much as in *knowltoni*, differing especially as follows. Inner dististyle with setae of outer face unusually strong and powerful, erect, the subtending spinous points unusually conspicuous. Finger-like lobe of basistyle, which appears to represent an interbase, much smaller than in *knowltoni*, with abundant appressed spinulose points, the lobes not meeting at the midline of body. In *knowltoni*, on slide mounts, these structures meet and slightly overlap at the meson while their vestiture, especially near the base, is different.

Habitat.—California (Nevada Co.)

Holotype, ♂, Cisco, June 13, 1939 (Mont Cazier). Allotopotype, ♀, pinned with type. Paratopotypes, 2 ♀♀.

The nearest described relative of the present fly appears to be *Dactylolabis knowltoni* Alexander, of northern Utah, which differs in the polished black lateral praescutal stripes and centers of the scutal lobes, and in the details of structure of the male hypopygium, as discussed above. The triangular points that subtend the setae of the

inner dististyle are very conspicuous in both of these species, much more so than in *D. nitidithorax* Alexander, of California.

Dicranota (Rhaphidolabis) xanthosoma sp. n.

General coloration of body yellow, without pattern; antennae 13-segmented, scape and pedicel yellow, flagellum brown; legs yellow, the terminal two tarsal segments infuscated; wings with *Rs* relatively long, strongly arcuated; *R*₂₊₃₊₄ elongate, exceeding *r-m*; *R*₂ very oblique.

Female.—Length about 5.2 mm.; wing 7 mm.

Rostrum and palpi yellow. Antennae 13-segmented; scape and pedicel light yellow, flagellum brown; flagellar segments long-oval, the outer ones even more elongate; verticils relatively conspicuous. Head dark yellow.

Thorax uniformly yellow, without pattern. Halteres uniformly pale. Legs yellow, with only the outer two tarsal segments a trifle more infuscated. Wings with a pale yellow tinge, the stigma and prearcular field a trifle clearer yellow; veins pale brown, brighter in the flavous portions. Venation: *Rs* relatively long, strongly arcuated; *R*₂₊₃₊₄ elongate, exceeding *r-m*; vein *R*₂ very oblique, subequal to *R*₁₊₂; basal section of *R*₅ greatly reduced, *r-m* correspondingly long; cell *M*₁ nearly one-third as long as its petiole; *m-cu* more than one-half its length beyond the fork of *M*.

Abdomen yellow, the tergites a trifle darker than the sternites. Ovipositor with the cerci strongly compressed-flattened, upcurved to the subacute tips.

Habitat.—Oregon (Hood River Co.)

Holotype, ♀, Hood Rapids, Mt. Hood, July 29, 1921 (Melander).

I am greatly indebted to Dr. Melander for the privilege of retaining the type in my collection.

Dicranota (Rhaphidolabis) xanthosoma is quite distinct from all other regional members of the subgenus in the uniform yellow coloration of the body. The yellow basal segments of the antennae, pale halteres, and yellow legs likewise provide well-marked specific characters. Other regional members of the subgenus have the body either brown or gray.

Dicranota (Rhaphidolabis) cazieriana sp. n.

Size large (wing, male, 7.5 mm.); general coloration gray, the praescutum with three conspicuous brownish black stripes; wings whitish subhyaline, the oval stigma dark brown, very conspicuous; *R*₂₊₃₊₄ elongate, more than one-half *Rs*; male hypopygium with the median lobe of tergite unusually low and obtuse; lateral tergal arms with slender stems, the narrow apical blades prolonged into a very long, simple, apical spine; interbase provided with about 100 setae on its expanded disk; basistyle at apex prolonged into a stout lobe that is subequal in length to the dististyles.

Male.—Length about 6.5 mm.; wing 7.5 mm.

Female.—Length about 7 mm.; wing 8.5 mm.

Rostrum black, sparsely pruinose; palpi black. Antennal scape black, sparsely pruinose; pedicel black; flagellum broken. Head brownish gray; anterior vertex broad, more than three times the diameter of scape; pubescence of eyes unusually conspicuous.

Pronotum infuscated above, more yellowish gray on sides. Mesonotal praescutum yellowish gray, with three unusually conspicuous brownish black stripes; scutum black, yellowish gray pruinose; scutellum brownish gray on central portion, distinctly reddened on sides;

parascutella dark; postnotum light gray. Pleura and pleurotergite gray, the ventral sternopleurite still darker. Halteres with stem yellow, knob brownish black. Legs with coxae brownish gray; trochanters brownish yellow; femora obscure brownish yellow basally, passing into brownish black; tibiae and tarsi black. Wings whitish subhyaline, the oval stigma dark brown, very conspicuous; veins brownish black, those of the prearcular field more brownish yellow. Venation: Sc_1 ending about opposite fork of R_{2+3+4} ; R_s relatively short, arcuated; R_{2+3+4} conspicuous, in male more than one half R_s ; vein R_2 transverse, close to tip of vein R_1 so R_{1+2} is very short; $m-cu$ about one-fourth its length beyond the fork of M .

Abdomen, including hypopygium, brownish black. Male hypopygium with the median lobe of tergite unusually low and obtuse; lateral tergal arms entirely distinct in conformation from those of *neomexicana*, appearing as flattened blades with unusually slender stems, the expanded blade narrow, produced into a very long simple apical spinous point; sublateral hairy arms slender but conspicuous, as in *neomexicana*. Basistyle with apical lobe stout, about as long as either dististyle. Interbase somewhat as in *neomexicana*; the expanded disk densely provided with setae, totalling approximately 100; an additional linear row of about eight setae closer to the base of plate; apical blade of interbase shorter and stouter than in *neomexicana*. Both dististyles subequal in length, the inner style a little expanded at apex, provided with several small setae and two large, powerful ones on disk of blade.

Habitat.—California.

Holotype, ♂, Moraga, Alameda Co., May 1, 1939 (Cazier). Allotype, ♀, Mt. Hamilton, Santa Clara Co., altitude 3,000 feet, May 19, 1940 (T. H. G. Aitken).

I am pleased to dedicate this fly to the collector of the holotype specimen, Mr. Mont A. Cazier, of the American Museum of Natural History. The species is allied to *Dicranota (Rhaphidolabis) neomexicana* (Alexander), *D. (R.) subsessilis* Alexander, and others, from all of which it is readily distinguished by the structure of the male hypopygium, particularly the tergite and interbases.

Dicranota (Rhaphidolabis) neomexicana querula subsp. n.

Male.—Length about 5 mm.; wing about 5 mm.; antenna about 0.6 mm.

As in the typical subspecies, differing especially in the details of structure of the male hypopygium, particularly of the ninth tergite and inner dististyle.

Wings with the stigmal darkening much paler, inconspicuous against the ground. Male hypopygium with the median region of tergite strongly produced into a parallel-sided lobe, the apex of which is truncated and provided with more than a score of strong setae that are directed caudad; sublateral hairy arms large and conspicuous, directed strongly inward; lateral tergal arms appearing as powerful flattened blades. Interbases much as in the typical subspecies. Outer dististyle longer than the apical lobe of basistyle, provided with sparse chitinized pegs at apex. Inner dististyle broad-based, the distal third abruptly narrowed into a cylindrical lobe that is less than one-fourth as wide as the expanded proximal portion.

Habitat.—Idaho.

Holotype, ♂, Emida, August 27, 1938 (J. W. Zukel).