

A NEW SPECIES OF TIPULA INJURIOUS TO PASTURE LANDS

(*Tipulidæ*, *Diptera*)

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The following undescribed species of crane-fly was kindly sent to me for determination by Messrs. Packard and Thompson. The species, together with several additional members of the genus, is recorded as doing material injury to the interior pasture lands of California.

Tipula graminivora, new species.

Small species (male not over 10 mm. in length); males full-winged, females with the wings semi-atrophied; general coloration gray, the mesonotal praescutum with four dark brown stripes; wings of male yellowish subhyaline, clouded with grayish brown; ninth tergite of the male hypopygium with a very broad, V-shaped median notch; tergal valves of ovipositor flattened, terminating in a curved hook.

Male.—Length, 8.5–9.3 mm.; wing, 9–9.5 mm.

Female.—Length, 12.5–14 mm.; wing, 3.1–3.3 mm.

Male. Frontal prolongation of head gray; nasus stout; palpi brown, the basal segment pruinose. Antennæ short, dark brown throughout, the flagellar segments short-cylindrical, feebly constricted near midlength. Head gray; a row of setæ on vertex parallel with inner margin of eye.

Mesonotal praescutum light brown with four dark brown stripes, the intermediate pair separated by a narrow median line of the ground-color, the lateral stripes with paler centers; scutum gray, the lobes darker gray; remainder of mesonotum gray, a capillary, dark brown, median line extending from scutum to base of abdomen; scutellum and postnotum with scattered black setæ. Pleura gray. Halteres brown, the knobs darker. Legs with the coxæ gray; trochanters dark brown; remainder of the legs dark brown, the femoral bases broadly obscure yellow, narrowest on fore legs, broadest on the posterior legs where only the broad tips are infuscated. Wings yellowish subhyaline, handsomely clouded with grayish brown;

stigma grayish brown; small brown clouds at the origin of the sector and along the cord; conspicuous clouds in cell R_3 except the base, cells M_1 and $2nd\ M_2$, cell M_4 except the base; conspicuous clouds in the center of cells Cu_1 , ends of the anal cells, base and tip of cell Cu and two conspicuous areas in cell M , one near midlength, the second, larger, in the outer end of the cell; a conspicuous oblitative streak before the cord, extending from cell $1st\ R_1$ across the basal third of cell $1st\ M_2$ into the base of cell M_4 ; veins dark brown. Venation: Tip of R_2 about one-half longer than R_2+3 ; cell $1st\ M_2$ elongate, the sides parallel; petiole of cell M_1 a little longer than m ; $m-cu$ at about one-third the length of cell $1st\ M_2$.

Abdominal tergites brown, the lateral margins broadly and conspicuously buffy gray; sternites similar but sparsely pruinose, the caudal margins of the sternites and the subterminal tergites very narrowly reddish yellow. Male hypopygium simple, the sclerites covered with pale, appressed, silken hairs. Ninth tergite flattened, the caudal margin with a very broad and shallow V-shaped notch, the edges narrowly blackened. Ninth sterno-pleurite projecting slightly caudad, profoundly but narrowly split medially, the cephalic-median area membranaceous; outer pleural appendage small, cylindrical. Eighth sternite practically unarmed, the dorsal caudal margin with a small area of black bristles on either side of the median line.

Female. Generally similar to the male, differing as follows: Antennæ much shorter. Legs shorter and stouter. Wings reduced to pads that extend about to the end of the second abdominal segment; wings infuscated with somewhat paler bases; venation considerably distorted but showing approximately the same arrangement as in male; macrotrichia along the costal margin; a dense series of from 55 to 60 along R ; about 9 along R_4+5 ; about 4 on the basal portion of M ; a series of about 9 powerful spinous setæ on the basal section of Cu before the arculus. Abdomen rather elongate, the tergites mostly highly polished, dark chestnut brown, the

caudal margins of the subterminal segments obscure yellow; shield of the ovipositor black, very long, subcylindrical to slightly compressed, carinate dorso-medially. Ovipositor with only the tergal valves functional, these appearing as flattened, chitinized, rectangular blades, the margins smooth, the caudal-proximal angle produced caudad and laterad into a powerful spine.

Habitat.—California.

Holotype, male, Elmira, April 7, 1921 (B. G. Thompson); Sac. No. 2185.

Allotype, female, Galt, March 29, 1921 (B. G. Thompson); Sac. No. 2164.

Paratopotypes, 5 males, April 7 and 12, 1921 (Nos. 2186, 2187, 21103, 21105, and 21106).

Paratypes, 1 male, Dixon, March 31, 1921, No. 2176; 2 males, 3 females, April 12, 1921 (Nos. 21101, 21102, and 21100, 2198, 2199); Franklin, April 1, 1921 (No. 2178); Galt, April 1, 1921 (No. 2177).

Type in the collection of the National Museum.

Tipula graminivora is allied to *T. quaylii* Doane, *T. bituberculata* Doane, *T. cahuilla* Alexander and others, especially to *T. quaylii*, but is a remarkably distinct species.