

UNDESCRIBED SPECIES OF TIPULIDAE FROM THE
WESTERN UNITED STATES

Part V*

(Diptera)

CHARLES P. ALEXANDER

University of Massachusetts, Amherst

The preceding part under this general title was published in the Pan-Pacific Entomologist, 26:81-85; 1950. At this time I am describing three species belonging to the genus *Tipula* from California, all collected by myself in 1953 and 1957. The major work on the crane-flies for the California Insect Survey is progressing rapidly but records for many species that should occur are still lacking and it is evident that further intensive field work must be done. I am planning to do further collecting in the state in 1958 and 1959 and any miscellaneous specimens from poorly known parts of the state and at unusual seasons would be greatly appreciated in order to complete the record.

***Tipula (Bellardina) umbra* Alexander, new species**

Allied to *gothicana* Alexander; mesonotal praescutum with the restricted ground buffy yellow, with four discal stripes and the lateral margins brown; scutum chiefly dark brown, each lobe with a V-shaped pale mark; femora obscure yellow, tips narrowly black, claws of male toothed; wings strongly darkened, variegated by restricted darker and numerous small yellow markings; veins beyond cord with numerous macrotrichia; abdomen brownish yellow, lateral tergal borders blackened; male hypopygium with the tergite large, posterior border shallowly emarginate, with conspicuous lateral lobes, ventral surface with a median lobe directed cephalad, the apex spiculose; dististyles large, very irregular in outline.

Male.—Length about 21 mm.; wing 18.5 mm.; antenna about 3.4 mm.

Female.—Length about 20 mm.; wing 20 mm.

Frontal prolongation of head dark brown above, including nasus, more reddish brown on sides, obscure yellow beneath at base; palpi dark brown. Antennae of moderate length in both sexes; scape and pedicel obscure yellow to brownish yellow, flagellum brown; verticils much longer than the segments, basal enlargements small. Head dark brown, paler in front, orbits restrictedly pale.

Pronotum obscure yellow, with three brown areas. Mesonotal praescutum with the restricted ground obscure buffy yellow, the surface almost covered by four brown stripes that are narrowly and vaguely bordered by darker, the intermediate pair confluent at suture; humeral and lateral

* Contribution No. 1289 from the Entomological Laboratory of the University of Massachusetts.

I wish to express my indebtedness to the National Science Foundation for financial aid in conducting field explorations in California in 1957.

margins similarly darkened, restricting the lateral interspace to a narrow line; scutum chiefly dark brown, each lobe with a V-shaped pale mark; scutellum dark brown, broadly paler posteriorly; parascutella dark brown; mediotergite light brown, posterior border with two circular pale areas. Pleura and pleurotergite chiefly brown, variegated with paler. Halteres with stem brown, restrictedly reddened at base, apex of knob obscure yellow. Legs with coxae infuscated basally, broadly yellow at tips, trochanters obscure yellow, with a large brownish black spot on lower face; femora obscure yellow, tips narrowly but conspicuously black, the amount subequal on all legs; tibiae obscure yellow, tips narrowly brownish black; basitarsi brownish yellow, the outer ends, with remainder of tarsi, black; claws of male toothed. Wings with the ground strongly darkened, variegated by restricted darker brown areas and small but more numerous yellow marks; darker areas include stigma, origin of R_s and a spot at near one-third the length of cell Cu ; the yellow marks occur before and beyond origin of R_s ; poststigmatal extending into cells R_2 and R_3 ; at cord; near outer end of cell M ; before and beyond the darkened area in cell Cu , and as marginal spots in cells R_5 , M_1 , $2nd\ M_2$, M_3 , and two in cell $1st\ A$, those in the medial field small; prearcular and costal fields slightly paler than the ground; veins yellowish brown. Veins beyond cord with numerous macrotrichia, more restricted on M . Venation: R_1 sinuous, narrowing the cell at near midlength; cell $1st\ M_2$ small, subpentagonal; petiole of cell M_1 and m subequal.

Abdominal tergites brownish yellow, lateral borders conspicuously blackened, posterior margins of segments narrowly pale; basal sternites of male clearer yellow, outer segments more darkened; hypopygium yellowish brown. Ovipositor with valves elongate; cerci castaneous, gently upcurved, tips obtuse; hypovalvae compressed, yellow. Male hypopygium with the tergite large, narrowed posteriorly, the apex shallowly emarginate, with conspicuous lateral lobes; on ventral surface with a large fleshy lobe directed cephalad, the apex spiculate. Two dististyles, both very irregular in outline, the outer style larger, at apex produced into two lobes or blades, before tip with a further flattened blade subtended outwardly by a slender rod; inner style nearly as large, appearing as a slightly curved flattened blade, the concave inner margin at near midlength produced into a point. Gonapophyses appearing as two every slender rods, longer than the sheath of the aedeagus; what appears to be the outer part of this organ lies detached in the type slide, appearing as a slender sclerotized rod.

Holotype male, CASTLE CRAGS STATE PARK, SHASTA COUNTY, CALIFORNIA, 2000 ft., July 6, 1953 (Alexander). Allotopotype female, pinned with type.

The nearest ally is the generally similar *Tipula (Bellardina) gothicana* Alexander, which is widely distributed in western America and readily distinguished by the quite different male hypopygium, especially the tergite and dististyles.

***Tipula (Lunatipula) twightae* Alexander, new species**

Allied to *perfidiosa* Alexander; antennal flagellar segments of male

strongly incised; mesonotal praescutum with three orange-yellow stripes, the interspaces slightly darker; wings weakly suffused with brown, the prearcular and costal fields more brownish yellow, darkened pattern inconspicuous; abdomen obscure yellow, outer segments darker; inner dististyle of male hypopygium without a dorsal crest, lower beak well-developed; outer basal lobe much as in *perfidiosa*.

Male.—Length about 15 mm.; wing 15 mm.; antenna about 5 mm.

Frontal prolongation of head brownish yellow, nasus conspicuous; palpi with basal segments testaceous yellow, outer segments black. Antennae of male relatively long, as shown by the measurements; basal three segments obscure yellow, remaining segments vaguely bicolored, the basal enlargements black, the remainder brown; segments a trifle longer than the verticils; flagellar segments very strongly incised, the long outer swelling being fully as deep as the short-oval basal enlargement. Head gray, clearer gray in front and on the narrow orbits; vertex with the central area narrowly darker brown, narrowed to a point behind, without setae.

Pronotum buffy yellow. General coloration of mesonotum orange-yellow, including the three praescutal stripes, the interbases slightly darker brown; centers of scutal lobes similarly orange-yellow; scutellum and mediotergite sparsely pruinose, the former with a vague capillary darker line. Pleura buffy yellow, sparsely pruinose. Halteres with stem obscure yellow, knob darkened. Legs with coxae buffy, sparsely pruinose; trochanters yellow; femora and tibiae obscure brownish yellow, tips narrowly and inconspicuously darker brown; tarsi dark brown to brownish black; claws of male long, toothed. Wings weakly suffused with brown, prearcular and costal fields more brownish yellow; stigma pale brown, relatively inconspicuous; darkened wing pattern very reduced, including small brown areas at origin of R_s and over anterior cord; centers of outer cells vaguely darkened; obliterative area at cord relatively conspicuous, extending from before stigma into base of cell M_3 ; veins brown, more brownish yellow in the prearcular and costal areas. Venation: R_s more than twice R_{2+3} ; petiole of cell M_1 shorter than m ; $m-cu$ at fork of M_{3+4} , the latter short, less than one-half m .

Abdominal tergites obscure yellow, clearer basally, sternites still clearer; outer subterminal segments more darkened. Male hypopygium with the tergite deeply emarginate on both the posterior and cephalic borders, the former produced into two lobes, margins narrowly sclerotized and microscopically roughened; on ventral surface of plate on either side with a V-shaped carina, the margins roughened. Ninth sternite with a complex bilobed appendage on either side of the aedeagus. Basistyle with its dorsal end produced into a slender arm adjoining the sternite. Outer dististyle elongate, gently widened at outer end, the margin fringed with long conspicuous black setae; inner style with the main body relatively narrow, beak very slender at outer end, lower beak much stouter; no developed dorsal crest as in some allied species; outer basal lobe generally as in *perfidiosa* and *modoc* Alexander, appearing as a flattened plate, the outer third narrowed into a long slender spine, surface of expanded basal part

with long pale setae; sensory pits in a compact group at base between the body of style and the outer basal lobe. Phallosome appearing as a flattened blade that is produced into paired blackened points. Eighth sternite sheathing, narrowed outwardly, the truncated posterior border with two triangular groups of long brownish yellow setae, the hairlike tips pale and conspicuously twisted.

Holotype male, CASTLE CRAGS STATE PARK, SHASTA COUNTY, CALIFORNIA, 2000 ft., July 8, 1953 (Alexander).

I take great pleasure in dedicating this interesting crane-fly to Mrs. Mary Twight (Mrs. Benjamin Twight), former custodian of the Castle Crags State Park, to whom we are indebted for many kindly favors. Mrs. Twight is a capable botanist who has made many interesting plant discoveries in and near Castle Crags. The type of this interesting fly was taken along small streamlets that flowed into the Sacramento River at the park. It was closely associated with the striking phantom orchid or silver slipper, *Cephalanthera Austinae* (Gray), that was numerous and in full flower at this date.

The fly is related to species such as *Tipula (Lunatipula) perfidiosa* Alexander, *T. (L.) modoc* Alexander and *T. (L.) macnabi* Alexander, all with somewhat similar antennae and having the general plan of the male hypopygium the same, differing very conspicuously in the details of structure of the latter, particularly the tergite and inner dististyle.

Tipula (Lunatipula) leiocantha Alexander, new species

Belongs to the *impudica* group, allied to *carunculata* Alexander; mesonotal praescutum grayish yellow with a broad fulvous brown central stripe that is narrowly margined laterally with dark brown; femora obscure yellow, tips narrowly darkened; wings strongly tinged with brown, restrictedly patterned with darker brown and subhyaline areas; male hypopygium having the tergal canthi with smooth margins; inner dististyle with the lower apical appendage nearly as long as the remainder of style; eighth sternite with posterior border subtruncate, very densely fringed with long yellow setae.

Male.—Length about 15–16 mm.; wing 15–16.5 mm.; antenna about 4.3–4.5 mm.

Frontal prolongation of head elongate, polished brownish yellow; nasus very short; palpi with basal three segments brownish yellow, terminal segment dark brown. Antennae moderately long, as shown by the measurements; scape and pedicel light yellow, flagellum brownish black to black; flagellar segments exceeding the verticils in length; basal enlargements well-developed. Head grayish brown, clearer gray on front and the very narrow orbits; a capillary dark brown central vitta extending from the low vertical tubercle backward.

Pronotum obscure yellow, vaguely patterned with pale brown areas. Mesonotal praescutum obscure grayish yellow, patterned with fulvous brown and dark brown; a broad fulvous brown central stripe, narrowly margined laterally with dark brown; lateral stripes dark brown; setae of interspaces darkened; scutum grayish yellow, each lobe with two brown areas, the anterior one very small; scutellum grayish yellow with a central darkening and a less evident lateral spot near base; mediotergite grayish yellow, more or less patterned with reddish brown on central and posterior parts; pleurotergite with the katapleurotergite darker than the anapleurotergite. Pleura brownish yellow, vaguely patterned with darker. Halteres with stem brownish yellow, clearer yellow basally, knob dark brown. Legs with the coxae and trochanters obscure yellow; femora obscure yellow, tips narrowly darkened; tibiae and tarsi brownish yellow, the outer tarsal segments passing into dark brown; terminal tarsal segment with a blackened ventral spot; claws of male toothed. Wings strongly tinged with brown, somewhat darker in outer radial field and over *m-cu*; a restricted darkening near midlength of cell 2nd *A* at margin; stigma darker brown; obliterative areas whitened but relatively inconspicuous, poststigmatal brightening more yellowed; veins brown. Venation: Petiole of cell *M*₁ subequal to or shorter than *m*.

Abdominal tergites polished yellow; a narrow, nearly continuous median brown vitta; lateral borders broadly light gray, margined internally by a narrow broken darkened line, in some cases this is evident only on the basal ring of the segment; sternites yellow, outer segments slightly darker; hypopygium brownish yellow. Male hypopygium generally as in *lyrifera* Dietz and allies. Ninth tergite with a narrow median incision, the canthi triangular, subacute at tips, margins entirely smooth; inflexed lateral parts subtriangular in outline; subtergal process parallel-sided, the apex extended into pale membrane. Basistyle with the apical sclerotized point short but slender. Outer dististyle broad basally, strongly narrowed on outer half; inner style with the beak obtuse; lower apical appendage nearly as long as the remainder of style, appearing as a straight flattened blade, the inner margin with a few weak scattered setae, the outer margin of basal half with abundant delicate setae. Eighth sternite with the posterior border subtruncate, very densely fringed with long yellow setae.

Holotype male, BIG PINE CREEK, INYO COUNTY, CALIFORNIA, on sage-covered hillsides at Glacier Lodge, 7800 ft., July 11, 1957 (Alexander). Paratopotypes, two males, July 10–11, 1957. Associated with *Tipula (Lunatipula) mono* Alexander.

The described species of the *impudica* group that have the lower apical appendage of the inner dististyle of the male hypopygium greatly lengthened as in the present fly, include *Tipula (Lunatipula) carunculata* Alexander, *T. (L.) diversa* Dietz and *T. (L.) lyrifera* Dietz, all differing among themselves in coloration of the body and wings and especially in the structure

of the male hypopygium. The present fly is best told from *carunculata* by the hypopygial characters, including the entirely smooth tergal canthi.
