

**NEW OR INSUFFICIENTLY-KNOWN CRANE-FLIES
FROM THE NEARCTIC REGION (DIPTERA,
TIPULIDAE). PART IX¹**

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The preceding part under this general title was published in 1947 (Bull. Brooklyn Ent. Soc., 42: 131-135). At this time I am describing three further species from Arizona and California.

***Tipula* (*Bellardina*) *praelauta* n. sp.**

Mesonotum yellow or brownish yellow, paling to light gray on sides, the disk with four conspicuous darker gray stripes that are narrowly margined with dark brown; mediotergite light gray with a brown line on either side of the midstripe; femora and tibiae light brown, the tips narrowly darker; wings medium brown, conspicuously striped longitudinally with whitish subhyaline, including a streak occupying most of cell *R* and continued to the wing-tip in cell *R*₅; abdominal tergites reddish brown, trivittate with dark brown; male hypopygium with the ninth tergite separate from the combined basistyle and ninth sternite; ninth tergite trilobed, the lateral lobes broader; median lobe depressed-flattened, its apex weakly notched; outer dististyle an irregular pale blade, at apex split into a long black spine and a somewhat broader pale blade; inner style a larger flattened pale blade, at its base with a slender taillike lobe; ninth sternite produced caudad into a conspicuous appendage that is split into two halves.

Male. Length about 20-22 mm.; wing 21-23 mm.; antenna about 3.8-4 mm.

Female. Length about 25-26 mm.; wing 22 mm.

Frontal prolongation of head brownish yellow; nasus elongate; palpi dark brown. Antennae with the scape and pedicel yellow; flagellar segments weakly bicolored, the small basal enlargement brown, the stem more yellowed, the outer segments more uniformly darkened; scape elongate, fully equal in length to the first three flagellar segments combined; verticils long and conspicuous. Head above light gray, on orbits passing into brown; vertical tubercle low and inconspicuous.

Pronotum buffy, with a dark brown median stripe. Mesonotal praescutum with the ground obscure yellow or brownish yellow,

¹ Contribution from the Department of Entomology, University of Massachusetts.

paling to light gray on sides; four conspicuous darker gray stripes that are narrowly margined with dark brown, least so on outer margins of the intermediate stripes, more heavily so on the inner edges; scutal lobes pale brown with gray centers; scutellum pale brown, parascutella dark; mediotergite light gray, with a conspicuous brown line on either side of the broader midline, not reaching the posterior border; pleurotergite brownish gray, the katapleurotergite more silvery gray. Pleura brownish gray, with a relatively inconspicuous dorsal brown stripe that is narrowed behind; dorso-pleural membrane buffy. Halteres long, stem brown, brighter at base, knob dark brown. Legs with the coxae gray; trochanters more yellowed; femora and tibiae light brown, the tips narrowly darker; tarsi dark brown, even darker outwardly; spur-formula apparently 1-1-1; claws (male) toothed. Wings medium brown, conspicuously striped longitudinally with whitish subhyaline, including a streak occupying most of cell *R* and continued to wing tip in cell *R*₅; a somewhat comparable pale line along vein *1st A*; costal border and a seam along vein *Cu* somewhat darker brown than the remainder of ground; stigma brown; pale marginal spots in ends of cells *2nd M*₂, *M*₃ and *M*₄; veins brown, anterior cord more yellowed. Squama with numerous trichia; outer medial veins glabrous, *R*₄₊₅ and *Cu* with numerous trichia. Venation: *Rs* about one-half longer than *R*₂₊₃; *R*₁₊₂ entire; *R*₃ virtually straight, *R*₄₊₅ arcuate at near midlength; inner end of cell *1st M*₂ lying proximad of cells *R*₃ and *R*₅; *M*₃₊₄ subequal in length to basal section of *M*₄; cell *2nd A* broad.

Abdominal tergites reddish brown, trivittate with dark brown, the broader median stripe almost continuous, the laterals broadly interrupted on the posterior portions of the segments; subterminal segments more uniformly darkened; sternites uniformly reddish brown; hypopygium brownish yellow. Ovipositor with cerci long and slender, nearly straight to very gently upcurved. Male hypopygium with the ninth tergite separated from the region of the combined basistyle and ninth sternite by membrane; no evident pleural suture. Ninth tergite with the caudal margin trilobed, the lateral lobes broader, entire, with long conspicuous setae; median lobe depressed-flattened, its apex weakly notched, the surface with a row of inwardly-directed setae on either side of the midline. Outer dististyle an irregular pale blade, at apex split into a long black spine and a somewhat broader pale blade, these lying parallel to one another. Inner dististyle a larger flattened pale blade, the outer margin of distal half with numerous small scattered setae;

at base of blade with a slender tail-like lobe. Ninth sternite produced caudad into a conspicuous appendage that is split into two halves. What appears to represent the aedeagus is an erect slender scooplike or pronglike structure arising from the ventral portion of the ninth sternite near the base of its appendage.

Habitat: Arizona. *Holotype:* ♂, Todd's Lodge, Oak Creek Canyon, altitude 5200 feet, October 2, 1948 (*John & Grace Sperry*). *Allotopotype,* ♀, and *paratopotypes,* ♂♀, September 1947, October 5, 1948.

This outstanding fly is another discovery made by the Sperrys, to whom I express my continued indebtedness for very many Tipulidae from our Far West. The longitudinally striped wings give the fly an appearance that is quite different from that of all other members of the subgenus *Bellardina* Edwards, where the wings are marbled and mottled in various patterns in the different species. I can see no reason to question the subgeneric assignment.

***Tipula (Lunatipula) inusitata* n. sp.**

Allied to *usitata*; general coloration of mesonotum light gray, the praescutum with five reddish brown stripes, the three central ones narrow; antennae with scape and pedicel yellow, flagellum black; wings with a weak brownish tinge, very restrictedly patterned; abdomen obscure yellow, trivittate with light brown, the lateral stripes broken, heaviest at the anterior end of segment; male hypopygium with the beak of the inner dististyle narrow, not cut off from body of style by a notch; outer basal lobe low and obtuse; phallosome with the unpaired element forking at apex into two subequal spinous points.

Male. Length about 13–16 mm.; wing 12–15.5 mm.; antenna about 4–4.5 mm.

Frontal prolongation of head yellow, the dorsum very sparsely pruinose; no nasus; palpi obscure yellow, the terminal segment a trifle darkened. Antennae with the scape and pedicel light yellow, flagellum black; flagellar segments only weakly incised, a trifle longer than the verticils. Head brownish gray, the anterior vertex with a light brown central line; vertical tubercle low.

Pronotum light gray, with a narrow reddish brown median mark. Mesonotal praescutum light gray, with five reddish brown stripes, the three central ones narrow, representing the borders of two light gray intermediate stripes; lateral praescutal stripes broader; posterior sclerites of notum light gray, each scutal lobe with two reddish brown areas, the region of the suture light yellow; scutellum

and mediotergite with a narrow central dark line. Pleura obscure yellow, light gray pruinose; dorsopleural region light yellow. Halteres pale, the knob weakly infuscated, its apex narrowly yellowed. Legs with the coxae and trochanters yellow; remainder of legs broken. Wings with a weak brownish tinge, more yellowed at base and in costal region; a very restricted brown pattern, most evident as the stigmal darkening; obliterative band at cord and the poststigmal brightening relatively conspicuous, the former extending about to midlength of vein M_4 ; a small brightened marginal spot in cell *1st A*; a small darkened cloud at Sc_2 ; veins brown. Venation: Rs about twice $m-cu$; R_{1+2} entire; M_{3+4} very short with $m-cu$ close to the fork.

Abdomen obscure yellow, trivittate with light brown, the median stripe virtually continuous, the lateral pair more broken into wavy lines, the anterior end of each darker; basal sternites pale; outer segments more uniformly brownish black; hypopygium extensively yellow. Male hypopygium with the ninth tergite having a broad posterior emargination, at the base of which with a further quadrate notch which bears a small basal lobe; lateral tergal lobes smooth and somewhat more sclerotized than the remainder of tergite; setigerous punctures of tergite large but sparse. Ninth sternite with its appendage a low obtuse cushion. Outer dististyle widely expanded outwardly, the apex oblique. Inner dististyle with the beak relatively slender, not cut off from the main body of style by a ventral notch, as is the case in *aurantionota* and *usitata*; dorsal crest very low to virtually lacking; posterior crest very pale to practically hyaline; outer basal lobe low and obtuse, jutting caudad a trifle beyond the level of the posterior crest. Phallosome with five elements, including two pairs of blades, the lateral pair of which narrow very gradually into a long spine; the unpaired element has approximately the same size and shape, at apex forked into two subequal spinous points. Eighth sternite with the caudal margin virtually transverse, membranous; on either side of midline slightly more elevated and bearing a group of from 9 to 11 long pale setae that are directed caudad.

Habitat: California. *Holotype*: ♂, Stanford University, May (R. W. Doane); Alexander Collection, received in an exchange of specimens, determined as *usitata* Doane by the latter. *Paratopotype*: 1 ♂, reared; larva found February 20, 1915, adult emerged April 10, 1915.

Although related to *Tipula* (*Lunatipula*) *aurantionota* Alexander and *T. (L.) usitata* Doane, the present fly is readily told by the structure of the male hypopygium, as compared above.

***Pedicia (Pedicia) subobtusa* n. sp.**

Allied to *obtusa*; thoracic dorsum almost uniformly fulvous yellow, pleura yellow, vaguely patterned with darker; antennal scape brown, the remainder more brownish yellow; wings with the disk whitened, the posterior border weakly more grayish subhyaline, the usual brown pattern with the seam along vein *Cu* ending at the cord; abdomen uniformly light brown; male hypopygium with the basistyle produced caudad beyond the point of insertion of the dististyle as a broad obtuse glabrous blade, opposite the base of the dististyle with a brush of long reddish setae; dististyle with four strong black spinous setae along outer margin; tergal lobes very broad, obtuse.

Male. Length about 27 mm.; wing 20 mm.

Rostrum and palpi brown. Antennae with scape brown, pedicel and flagellum more brownish yellow; basal flagellar segments short and crowded, the outer ones more elongate, with longer verticils. Head grayish brown; vertical tubercle low, entire.

Thoracic dorsum almost uniformly fulvous yellow, the sides of the pronotum more darkened; lateral praescutal borders more pruinose; posterior sclerites of notum yellow, silvery pruinose. Pleura obscure yellow, vaguely patterned with darker, more distinctly so on the dorsopleural membrane behind the spiracle. Halteres with stem pale, knob infuscated. Legs with the coxae yellow, sparsely pruinose; remainder of legs yellow, the tips of the femora and tibiae weakly infuscated; outer tarsal segments dark brown. Wings with the posterior border weakly grayish subhyaline, the disk more whitened; the usual brown pattern of the subgenus present, the dark seam along vein *Cu* ending at the cord but somewhat more angularly bent at *m-cu* than in *obtusa*; veins pale, including those in the darkened areas. Venation: Petiole of cell R_4 about two-thirds the oblique sinuous *r-m*; M_{3+4} about two-thirds M_4 alone; petiole of cell M_1 a trifle longer than *m*.

Abdomen, including hypopygium, virtually unicolorous light brown. Male hypopygium with the basistyle produced caudad beyond the point of insertion of the dististyle as a broad obtuse glabrous blade, opposite the base of the dististyle with a concentration or brush of long reddish setae. Dististyle approximately as in *obtusa*, differing in the details; outer margin before the hatchet-shaped lobe with four strong black spinous setae. Tergal lobes very broad, obtuse.

In *obtusa* the dististyle is terminal in position and broadly fused with the apex of the basistyle which bears no modified brush of

setae; dististyle of slightly different shape and armature; tergal lobes narrow, acute at tips.

Habitat: California. *Holotype*: ♂, Lake Tahoe, Placer Co., altitude 6000 feet, July 3, 1947 (C. P. Alexander).

The present species had been confused by me with *Pedicia* (*Pedicia*) *obtusa* Osten Sacken, which until very recently had been known only from the brief description provided by Osten Sacken in 1877. In 1948 the latter fly was re-discovered in northern California (Lassen Volcanic National Park, *Schulz*) and in Oregon (Peavine Ridge, Station 3A, *Fender*) and proved to be quite distinct from the present species, particularly in the structure of the male hypopygium, as compared above. Various records for *obtusa* by Aldrich (1895) and Coquillett (1900) refer to the entirely distinct *P. (P.) parvicellula* Alexander. Material taken in Siskiyou County, California, September 27–October 6 by James Behrens and recorded by Osten Sacken (1895) as *obtusa* may refer to that species or to the present fly.