

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

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The crane-flies discussed at this time are from California where they were derived from a variety of sources and taken by different collectors as indicated under the individual species. The materials were found in collections that are being studied in conjunction with the preparation of the Insect Survey Bulletin covering the Tipulidae and related families. I express my thanks to the entomologists who have taken these specimens, some representing species of unusual interest.

### *Pedicia (Pedicia) bellamyana*, n.sp.

Generally similar to *magnifica* in the wing pattern; wings narrow, cell  $M_1$  lacking.

FEMALE.—Length about 28 mm.; wing 22.5 x 4.6 mm.

Rostrum buffy brown, apical margin narrowly darker brown; palpi brown, terminal segment darker. Antennae with scape and pedicel obscure yellow; flagellum broken. Head brownish gray, more buffy behind; vertical tubercle very conspicuous by a circular basal impression.

Pronotum yellowed, sides of scutum and adjacent edge of propleura with a brown area. Mesonotal praescutum grayish white with four stripes, the narrow intermediate pair chestnut brown, narrowed behind, reaching the suture, the central ground area obscured, especially in front; lateral stripes broader but much paler; a small darkened mark on scutum behind the point of the suture; scutal lobes very pale brown; posterior sclerites of notum whitened, the anterior part of the pleurotergite a trifle darker. Pleura light yellow, the pteropleurite whitened; margins of the dorsopleural membrane with very narrow interrupted brown lines. Halteres with stem whitened, knob light brown. Legs with coxae grayish yellow, trochanters slightly darker; remainder of legs obscure yellow, outer tarsal segments a trifle darker, ventrally with dense darkened setae. Wings narrow, as shown by the measurements; the restricted ground whitened, with the dark pattern arranged much as in *magnifica*, that is, with a broad pale brown posterior border, interrupted only in cell  $R_4$ ; darkened costal border broad, palest in base of cell  $C$ ; central stripe darkest, behind narrowly bordered by still darker, this color also on the cephalic edge of the stripe before the cord and on the posterior margin of the costal darkening behind  $R_s$ ; no darkened extension on the central darkening along the distal section of  $Cu_1$ ; veins yellowed. Venation:  $Sc_2$  opposite origin of  $R_s$ , the latter very long;  $R_{1+2}$  nearly four times  $R_2$ ;  $r-m$  at or just beyond fork of  $R_s$ ; petiole of cell  $R_4$  relatively long, exceeding one-half  $r-m$ ; cell  $M_1$  lacking;

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cord very oblique, inner end of cell 1st  $M_2$  acutely pointed;  $m-cu$  gently sinuous; cell  $M_4$  relatively narrow.

Abdomen elongate; tergites buffy, segments one to three with a median brown stripe, darkest on the first segment, narrowed on the third, becoming obsolete behind; sternites more yellowed, basal two segments with a paler brown central line.

HABITAT.— California (Tulare and Plumas Counties).

HOLOTYPE, ♀, Mineral King, south of Sequoia National Park, Tulare County, September 2, 1962 (Richard A. Bellamy); Alexander Collection through Richard E. Bellamy. PARATYPE, ♀, Benner Creek, 6 miles northwest of Chester on Juniper Lake Road, Plumas County, August 20, 1963 (Mrs. LaVerne Erwin); collection of San Jose State College.

I take pleasure in dedicating this species to Dr. Richard E. Bellamy, fellow worker on the Tipulidae. This striking fly is most similar to *Pedicia* (*Pedicia*) *magnifica* Hine (British Columbia, Idaho, Oregon), differing evidently in the narrow wings and the loss of cell  $M_1$ . This latter character is identical in both specimens that are available and must be assumed to represent a normal condition, unique among the approximately twenty known species of the subgenus.

*Dicranota* (*Rhaphidolabis*) *sanctaeluciae*, n.sp.

Allied to *stigma* and *uniplagia*; mesonotum gray, praescutum with three black stripes; legs black, femoral bases more yellowed; wings weakly suffused, stigma large, darker brown;  $r-m$  at or just beyond the fork of  $R_{4+5}$ ; male hypopygium with the emargination of the tergite relatively narrow, lateral tergal armature not spinoid; dististyle relatively stout.

MALE.— Length about 7 mm.; wing 8 mm.; antenna about 1mm.

Rostrum gray; palpi black. Antennae short, 14-segmented, black; first flagellar segment elongate, subequal to segments two and three combined, remaining segments short-subcylindrical, the outer ones longer, subequal to their verticils. Head gray.

Pronotum dark gray. Mesonotum gray, praescutum with three black stripes, the central one broad; vestiture of the interspaces long, yellow; scutal lobes extensively blackened. Pleura dark gray; dorso-pleural membrane obscure brownish yellow. Halteres with stem yellow, knob infuscated. Legs with coxae gray; trochanters brownish yellow; remainder of legs brownish back to black, femoral bases more yellowed. Wings weakly suffused; stigma large, darker brown; veins brownish black. Venation:  $r-m$  at or just beyond the fork of  $R_{4+5}$ ; fork of  $M_{1+2}$  short.

Abdominal tergites brownish gray, the posterior borders very narrowly yellow; sternites paler brown; vestiture of segments long and conspicuous, yellow. Male hypopygium with the tergite very large, much as in *uniplagia*; posterior border with a narrow U-shaped emargination, the broad lateral lobes obliquely truncated, provided with abundant long setae; lateral tergal spines not clearly developed, as in *uniplagia*. Basistyle with outer apical lobe small, with very



long setae and two or three short blackened spinoid setae; inner lobe larger, with numerous blackened spinoid setae. Dististyle relatively stout, with a strong lateral carina.

HABITAT.— California (Monterey County).

HOLOTYPE, ♂, Salmon Creek, Santa Lucia Mountains, Los Padres National Forest, along a small rocky tributary on rocks close to water, May 2, 1964 (C. P. Alexander); Alexander Collection. PARATOPOTYPES, 3 ♂♂, (Dennis Hynes); Hynes Collection, Nos. 1243, 1244, 1245, male hypopygia on microscope slides.

Doctor Hynes and I collected this species while on a trip into the Santa Lucia Mountains, a wonderful rugged area that evidently supports a rich and varied crane-fly fauna that is becoming known through the efforts of Dr. Hynes. The only other regional species having male hypopygia with the tergite emarginate as in this fly are *Dicranota* (*Rhaphidolabis*) *stigma* Alexander, of Washington, and *D. (R.) uniplagia* Alexander, of Oregon, both readily separated by the details of venation and structure of the hypopygium, as described. There is no darkened discal cloud on the wing such as is found in *uniplagia*.

*Phyllolabis hurdi*, n.sp.

Size relatively large (wing of male 9.5 mm.); general coloration gray, praescutum with three brown stripes; wings whitened, restrictedly patterned with brown, including seams at cord and origin of  $R_s$ ; no stigmal trichia; vein  $R_4$  perpendicular at origin, with a conspicuous spur; male hypopygium with the basistyle tumid, outer end narrowed and decurved; lobe of ninth sternite massive, very large and complex.

MALE.— Length about 8.5 mm.; wing 9.5 mm.; antenna about 2 mm.

Rostrum dark gray; palpi brownish black. Antennae brownish black, scape more pruinose; flagellar segments long-oval to elongate, exceeding their verticils. Head light gray.

Pronotal scutum gray, vaguely patterned with pale brown; a group of black setae at each posterior angle. Mesonotal praescutum clear gray with three brown stripes; central vitta broad, not reaching the suture; pseudosutural foveae black; scutum and postnotum gray, each scutal lobe with two brown areas, the lateral one larger; posterior border of scutellum slightly more reddened. Pleura gray. Halteres whitened. Legs with all coxae and trochanters yellow; femora brownish yellow, tibiae darker, tarsi passing into dark brown. Wings whitened, restrictedly patterned with brown, the markings restricted to the vicinity of the veins, including broad seams at origin of  $R_s$  and over the cord, with narrower areas on  $m$  and basal section of vein  $R_4$ ; veins brown. Venation: Both  $Sc_1$  and  $Sc_2$  beyond the fork of  $R_s$ ;  $R_{2+3+4}$  longer than  $R_3$ ;  $R_4$  perpendicular at origin, at the bend with a long spur directed basad; weak spurs near origin of  $R_s$  and near the cephalic end of basal section of  $M_{1+2}$ , both directed basad; basal section of  $M_3$  long, exceeding twice  $m$ . No stigmal trichia, such as present in *encousta*; macrotrichia on longi-



tudinal veins, sparse and scattered on basal third of Sc, lacking on bases of  $Cu_1$  and 2nd A.

Abdomen brown. Male hypopygium with the posterior border of tergite terminating in a compact group of a few elongate setae. Basistyle tumid, narrowed outwardly, the tip slightly decurved, obtuse before apex with a lateral flange, nearer the base with a group of about 12 strong setae arranged in a double row. Dististyle subterminal, bilobed, the larger lobe pendant at base of style with a longer whitened lobe provided with many long delicate white setae from conspicuous brown punctures to produce a freckled appearance. Appendage of ninth sternite massive, very large and complex in structure, projecting caudad beyond the level of the basistyle.

HABITAT.—California (Madera County).

HOLOTYPE, ♂, San Joachim Experiment Station, February 22, 1953 (P. D. Hurd, Jr.); California Insect Survey Collection.

I am pleased to dedicate the species to the collector, Dr. Paul D. Hurd, Jr., student of the Hymenoptera. This is an unusually distinct species, differing from all others in the Nearctic fauna by the wing pattern and hypopygial structure. The only other regional species with patterned wings is *Phyllolabis myriosticta* Alexander which has abundant brown spots and dots in all the cells and with the hypopygial structure entirely different.

*Limnophila (Phylidorea) burdicki*, n.sp.

General coloration of thorax dull fulvous to light brown; antennal flagellum obscure yellow; knobs of halteres darkened; femora obscure yellow, narrowly darkened at and before tips; wings whitish, restrictedly patterned with brown, including the wing tip,  $Cu$  and Anal veins; abdomen fulvous yellow, the outer three or four segments blackened; male hypopygium with the tergal lobe divided, each lobule blackened, with a conspicuous lateral extension or flange; inner gonapophysis slender, straight; all three filaments of aedeagus elongate, subequal in length and diameter, the paired elements slightly expanded at tips.

MALE.—Length about 12 - 13 mm.; wing 11 - 12 mm.

FEMALE.—Length about 13 mm.; wing 12 mm.

Rostrum brownish black; palpi black. Antennae with scape light brown, remainder of organ obscure yellow; flagellar segments shorter than their verticils. Head light gray.

Thoracic dorsum almost uniformly dull fulvous to light brown, the posterior sclerites and pleura more whitened to appear pruinose. Halteres pale, knobs darkened. Legs with coxae reddish brown; trochanters fulvous; femora obscure yellow, fore pair with tips narrowly more darkened, the other legs with the marking slightly more subterminal, in cases the femora more uniformly pale throughout; tarsi darkened. Wings whitish, stigma oval, dark brown; a restricted but evident paler brown pattern that includes seams over cord and along vein  $Cu$ , the wing tip and anal veins more diffusely darkened.



Abdomen fulvous yellow, the outer three or four segments more blackened, the dististyles of the male hypopygium more brightened. Male hypopygium with the tergal lobe divided medially by pale membrane, each lobule blackened, with a conspicuous lateral extension or flange. Outer dististyle with distal end triangularly expanded, the outer angle farther produced; inner style with base slightly expanded, outer half slender. Lateral arms pale, triangularly expanded outwardly. Gonapophyses with basal struts longer than the unusually slender straight outer rods. Aedeagus with all three filaments elongate, subequal in length and diameter, the paired elements slightly expanded at tips.

HABITAT.— California (Sonoma County).

HOLOTYPE, ♂, 4 miles west of Plantation, May 1, 1958 (Donald Burdick); California Insect Survey Collection. ALLOTYPE, ♀, pinned with type. PARATYPES, 3 ♂♂, May 1 - 8, 1958.

The species is named for the collector, Dr. Donald Burdick. The most similar species include *Limnophila* (*Phylidorea*) *columbiana* Alexander and *L. (P.) snoqualmiensis* Alexander, which differ in slight details of coloration of the body, legs and wings and in hypopygial structure. The lateral filaments of the aedeagus in both of these species are very slender and not at all expanded at their tips. The superficially similar regional species *L. (P.) flavapila* Doane is readily told by the entire median tergal lobe of the hypopygium.

*Rhabdomastix* (*Sacandaga*) *neolurida flaviventris*, n. subsp.

Most similar to *Rhabdomastix* (*Sacandaga*) *neolurida setigera* Alexander (Colorado), differing in slight details of coloration and trichiation of the wing veins. Antennae shorter. Wings broad, as in *setigera*, the cells correspondingly widened; vein 2nd A without trichia. Abdomen, including the hypopygium, yellowed.

HABITAT.— California (San Bernardino County).

HOLOTYPE, ♂, Barton Flats, San Bernardino Mountains, 6300 feet, July 31, 1946 (John Sperry); Alexander Collection.

*Ormosia* (*Ormosia*) *nobilis*, n.sp.

Size very large (wing and body about 10 mm.); antennae of male very long; general coloration of mesonotal praescutum light cinnamon with three brown stripes, pseudosutural foveae black, conspicuous; femora obscure yellow, tibiae and tarsi brown; male hypopygium with the tergite broad, apex very shallowly emarginate, the outer lobes with dense setal brushes; phallosome including a Y-shaped central structure and paired gonapophyses.

MALE.— Length about 10 mm.; wing 10 mm.; antenna about 9 mm.

Rostrum and palpi brownish black. Antennae of male very long, nearly equal to the body or wing; scape and pedicel brownish yellow, flagellum dark brown; flagellar segments elongate subcylindrical, a little more thickened at their bases, with long outspreading



setae, those near base of segment longest, exceeding one-half the segment, the longest subequal to the blackened verticils. Head dark brown.

Pronotal scutum medium brown, scutellum obscure yellow. Mesonotal praescutum light cinnamon or dull orange, with three brown stripes, the median one broad; tuberculate pits and pseudosutural foveae black, the latter conspicuous; scutum chiefly dark brown, the posterior callosities yellowed; scutellum brownish yellow, postnotum a little darker. Pleura brown, vaguely patterned with brighter, especially on the propleura and mesepisternum. Halteres whitish yellow, the knobs more orange yellow. Legs with coxae brownish yellow; trochanters yellow; femora obscure yellow, tibiae and tarsi brown. Wings (a single wing of type present) weakly infuscated, stigma slightly darker; veins brown. Venation:  $Sc_1$  ending just beyond the level of  $R_2$ , the latter shorter than  $R_{2+3}$ ; cell  $2nd\ M_2$  nearly five times its petiole;  $m-cu$  at fork of  $M$ ; vein  $2nd\ A$  gently sinuous on outer half.

Abdomen dark brown, hypopygium a trifle paler. Male hypopygium with the tergite broad, slightly narrowed on outer half, posterior border very shallowly emarginate to form low broad lateral lobes that bear dense brushes of relatively long setae. Apex of basistyle produced into a lobe. Outer dististyle narrowly scoop-shaped, outer face blackened, microscopically scabrous, mesal part pale with delicate blackened setae; inner style subequal in length, broader, horn-yellow, glabrous. Phallosome including the slender aedeagus, a conspicuous Y-shaped central structure and paired gonapophyses that appear as strong curved hooks, their blackened tips acute, with extensive flattened basal expansions that are not in condition to describe or figure further on the present material.

HABITAT.—California (Alameda County).

HOLOTYPE, ♂, Berkeley, November 18, 1951 (J. W. Hinerman); California Insect Survey Collection.

This is the largest and most conspicuous American member of the subgenus. It is most similar to species such as *Ormosia* (*Ormosia*) *perspectabilis* Alexander and *O. (O.) upsilon* Alexander in the elongate male antennae, differing in the great length of the latter, and in the hypopygial structure, particularly the tergite, dististyles and phallosome.



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