

UNDESCRIBED SPECIES OF NEARCTIC TIPULIDAE (DIPTERA) IV.

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All species discussed at this time are from California where they were collected by Dr. Dennis Hynes, Mr. Hugh B. Leech and the present writer, the types being preserved in my collection except where indicated to the contrary. I am indebted to the other collectors for their continued interest in making known the rich Tipulid fauna of California.

Tipula (Lunatipula) cladacanthodes, n.sp.

Allied to *cladacantha*, differing chiefly in the hypopygial characters, especially the tergite and inner dististyle, the outer basal lobe of the latter with its anterior arm slender, posterior arm short, the apical points strongly divergent.

MALE.—Length about 17 mm.; wing 18 mm.; antenna about 6 mm.

Frontal prolongation of head subequal in length to the remainder, yellow; nasus small but distinct; palpi yellow, terminal segment brownish black. Antennae relatively long; basal three segments yellow, remainder brownish black, the basal enlargements slightly darker, especially on the outer segments; verticils shorter than the segments. Head buffy brown, more yellowed behind and surrounding the antennal bases; vertex with a capillary blackish median line.

Thoracic dorsum almost uniformly yellow, the usual praescutal stripes faintly differentiated. Pleura yellowed, vaguely patterned with darker yellow areas; dorsopleural membrane clear yellow. Halteres with stem yellow, knob dark brown. Legs with coxae and trochanters orange yellow; femora brownish yellow, tips darker brown; tibiae and basitarsi yellowish brown, remainder of tarsi darker; claws toothed. Wings brownish yellow, prearcular field, costal region and stigma slightly darker, proximal end of the last more yellowed; obliterative band before cord extensive; veins brownish yellow. Venation: Petiole of cell M_1 slightly exceeding m .

Abdomen chiefly yellowed, midregion of tergites slightly more infuscated; hypopygium yellow. Male hypopygium generally as in *cladacantha*, including the bifid outer basal lobe of the inner dististyle, differing in all details of structure. Tergal lobes more obtusely rounded at apices. Inner dististyle with main body narrower; outer basal lobe distinctive, the anterior arm slender, almost parallel-sided, posterior arm shorter and diverging more strongly from body of style, the apical points likewise strongly divergent.

HABITAT.—California (Monterey County).

1. Amherst, Massachusetts.

HOLOTYPE, ♂, Spruce Creek, June 25, 1962 (Dennis Hynes); Hynes No. 72.

The most similar species is *Tipula* (*Lunatipula*) *cladacantha* Alexander, of the Sierra Nevadas, California, which differs in the hypopygial characters, as discussed above.

Thaumastoptera hynesi, n.sp.

Size small (wing of male 4.5 mm.); general coloration of body, halteres and legs yellow; wings pale yellow, the inconspicuous veins slightly darker yellow; male hypopygium with the outer dististyle broad, the beak with a powerful seta on disk.

MALE.—Length about 3.8 mm.; wing 4.5 mm.; antenna about 1.2 mm.

Rostrum light yellow, palpi brown. Antenna with scape and pedicel yellow, flagellum dark brown; flagellar segments oval, shorter than their verticils. Head obscure yellow, the broad anterior vertex light silvery.

Thorax fulvous yellow, subnitidous; notal vestiture whitened. Halteres with stem white, knob more yellowed. Legs yellowish white throughout; claws long and slender, gently curved, simple. Wings pale yellow; veins inconspicuous, slightly darker yellow; macrotrichia dark brown. Longitudinal veins with numerous trichia, lacking on bases of veins *M*, *Cu* and Anals. Venation: *h* faintly indicated; *Sc*₁ ending about opposite three-fourths *Rs*; vein *R*₂ long, very pale and without trichia, close to top of *R*₁; vein *Sc*₂ also very pale, apparently far retracted and lying basad of origin of *Rs*; branches of *Rs* gently decurved, convergent outwardly, cell *R*₃ at margin narrower than cell *R*₅; petiole of cell 2nd *M*₂ only a little longer than the basal section of *M*₁₊₂; *m-cu* nearly opposite mid-length of *Rs*.

Abdomen, including hypopygium, light yellow. Male hypopygium with the tergal region at midwidth with a dense concentration of pale setae and setoid points, these directed mesad to form a compact median pocket. Basistyle with setae at apex of outer face very long, exceeding the dististyle in length. Dististyle terminal, broad, the outer crest obtusely rounded; beak developed, bearing a single powerful seta on disk, with additional more basal marginal setae, including a concentration of larger bristles near base. Phallosome including the simple sclerotized aedeagus arising from a basal sheath, thence slightly dilated, very gradually narrowed and curved to the acute tip.

HABITAT.—California (Monterey County).

HOLOTYPE, ♂, Spruce Creek, June 25, 1962 (Dennis Hynes); Hynes No. 70.

I take unusual pleasure in naming this outstanding fly for Dr. Dennis Hynes, who is accomplishing fine work on the biology of the California Tipulidae. This is a noteworthy discovery. The inconspicuous small fly furnishes the first record of occurrence of the

genus in the New World. The six species previously described are from Europe, the Philippines, South India, southeastern Africa, and Madagascar. Two further species are known as Tertiary fossils in the Gurnet Bay beds and from the Baltic Amber.

Dicranota (Plectromyia) lassenensis, n.sp.

General coloration of head and thorax dark gray, the praescutum with three slightly differentiated grayish brown stripes; femora obscure yellow, the tips narrowly more darkened; wings narrow, subhyaline, stigma pale brown; veins brown, conspicuous against the ground; male hypopygium with the median lobe of tergite very low; dististyle large and tumid, darkened, broadly oval in outline.

MALE.—Length about 4.8 - 5 mm.; wing 5.4 - 6 mm.; antenna about 0.6 - 0.7 mm.

FEMALE.—Length about 6 - 6.2 mm.; wing 6.2 - 6.5 mm.

Rostrum and palpi black. Antennae short, 13-segmented, brownish black throughout; basal flagellar segments long-oval, outer ones shorter, the segments less than their verticils. Head gray, posterior vertex variegated by brown areas on either side of midline.

Thorax dark gray, praescutum with three slightly differentiated grayish brown stripes. Pleura dark gray, dorsopleural membrane dusky. Halteres with stem yellow, knob infuscated. Legs with coxae yellowed, fore pair more darkened basally; femora obscure yellow, tips narrowly and vaguely more darkened; tibiae and tarsi yellowish brown, outer tarsal segments darker. Wings narrow, subhyaline, stigma oval, pale brown, base more yellowed; veins brown, conspicuous against the ground, prearcular veins yellowed. Longitudinal veins beyond cord chiefly with macrotrichia, lacking on R_{2+3+4} ; basad of cord lacking on M , present on outer ends of Cu_1 and the Anals. Venation: R_2 in cases very close to tip of R_1 , R_{1+2} shorter than R_2 ; R_{2+3+4} variable in length, from subequal to $r-m$ to twice this length; Rs arcuate to subangulate at near midlength; $m-cu$ about one-third to one-half its length beyond the fork of M .

Abdomen, including hypopygium, brownish gray, the latter large. Ovipositor with cerci horn yellow, hypovalvae paler. Male hypopygium with the median tergal area slightly produced to appear low convex in outline; each lateral arm produced into a long terminal spine. Interbase broadly expanded at near midlength, the apical spine slender. Dististyle very large and tumid, darkened, broadly oval in outline, outer face virtually glabrous, apex with a few elongate setae.

HABITAT.—California (Shasta County).

HOLOTYPE, ♂, Reflection Lake, Lassen Volcanic National Park, 5890 feet, August 5, 1958 (Alexander). ALLOTYPE, ♀, pinned with type. PARATOPOTYPES, 5 ♂ ♀, August 3-5, 1958 (Alexander).

Swept from vegetation along small stream flowing into Manzanita Lake opposite Park Headquarters.

The most similar species is *Dicranota (Plectromyia) cascadica* Alexander, of Oregon and Washington, which is told by the paler buffy brown coloration of the thorax and the details of the male hypopygium, especially the dististyle.

Gonomyia (Idiocera) leechi, n.sp.

Allied to *multistylata*; thoracic pleura heavily striped longitudinally with brown and yellow; wings conspicuously patterned with dark brown, cell *C* with a series of paler brown spots; veins R_{1+2} and R_3 confluent at margin, closing the cell; male hypopygium with the intermediate dististyle a small slender yellow rod.

MALE.—Length about 5.5 - 6 mm. wing 5.5 - 6.5 mm.

FEMALE.—Length about 6 - 7.5 mm.; wing 5.5 - 7 mm.

Described from alcoholic specimens. Rostrum dark brown; palpi black. Antennae with scape yellowed above, dark brown beneath; pedicel chiefly brown, flagellum black, the segments long-oval, subequal to the longest verticils. Head pale, vertex with a narrow dark brown central stripe.

Pronotum yellow, with four narrow brown longitudinal lines, including a lateral pair. Mesonotal praescutum with humeral and lateral areas with isolated yellow spots, disk with four nearly confluent dark stripes; scutum with lobes dark brown, median region yellow with a narrow brown central line; scutellum brown, with a yellow central area; mediotergite darkened on central part, broadly yellow on sides, this including also the dorsal pleurotergite. Pleura yellow, with conspicuous brown longitudinal stripes. Halteres with stem whitened, knob dark brown. Legs with femora obscure yellow, tips narrowly brown; tibiae and basitarsi yellowed, tips more narrowly brownish black, outer tarsal segments blackened. Wings whitish subhyaline, conspicuously patterned with dark brown, including the stigma and smaller spots at *h*, arculus, origin of *Rs*, fork of *Sc*, cord, forks of R_{2+3+4} and *M*, with weaker more or less confluent clouds at end of vein R_3 ; stigma paler brown; a series of from three to seven small pale brown spots in cell *C*; veins brown, *Sc* and the prearcular veins paler brown. Venation: R_{1+2} and R_3 confluent at margin, closing the cell.

Abdomen dark brown, pleural membrane of proximal segments pale. Male hypopygium with apical lobe of basistyle moderately long. Outer dististyle blackened, profoundly divided, outer arm a gently curved spine, its tip acute; inner arm subequal in length, at near two-thirds the length bent at a right angle into a strong spine, its tip acute, the point of angulation with a small spine; intermediate style a small pale yellow rod, about one-half as long as the arms of the outer style; inner dististyle a broad yellow blade, the apex truncate. Aedeagus slender, the simple slender tip decurved.

HABITAT.—California (Mono County).

HOLOTYPE, alcoholic ♂, The Hot Springs, 3 miles SSE of Bridgeport, at light, August 11, 1962 (H. B. Leech). ALLOTYPE, ♀. with

the type. PARATOPOTYPES, 5 ♂ ♀, with the types. Holotype in the California Academy of Sciences. Associated with *Limonia* (*Dicranomyia*) *brevivena* (Osten Sacken) and *Erioptera* (*Symplecta*) *cana* (Walker).

This species is named in honor of Hugh B. Leech, to whom we are indebted for several species of crane flies from California. It is closest to *Gonomyia* (*Idiocera*) *multistylata* Alexander, of southern Utah, the male hypopygium of which similarly has four dististyles or profound branches. The present fly is readily told by the length and coloration of the intermediate style which in *multistylata* is a long slender blackened spine, subequal in length to the branches of the outer style.

Lipsothrix hynesiana, n.sp.

General coloration of mesonotum obscure yellow with three brown areas, the median stripe divided behind; antennae of male elongate; legs obscure yellow; wings obscure yellow, faintly patterned with light brown; no macrotrichia in wing cells; veins R_{2+3+4} , R_{2+3} and R_3 subequal; cell 1st M_2 long-rectangular, subequal to vein M_3 ; male hypopygium with the interbase terminating in a narrow paddlelike blade, its tip obtuse.

MALE.—Length about 9.5 mm.; wing 10 mm.; antenna about 4.1 mm.

Rostrum yellow; palpi brown. Antennae of male elongate, as shown by the measurements; scape and pedicel obscure yellow, flagellum dark brown; flagellar segments elongate-cylindrical, with an abundant erect pubescence and slightly longer verticils that are less than one-third the segments. Head of type as seen from above apparently abnormal in color, gray on the right half, yellow on the left.

Pronotal scutum brown, scutellum light yellow. Mesonotal praescutum obscure yellow, with three brown areas, the median stripe divided behind, lateral areas paler and less evident; scutellum obscure yellow, center of each lobe with a single brown area; scutellum yellow; mediotergite brownish yellow. Pleura yellow, vaguely patterned with brown on anepisternum and ventral sternopleurite. Halteres pale yellow, knob brown. Legs with coxae and trochanters yellow; remainder of legs more obscure yellow, the outer tarsal segments very slightly darker; claws bispinous. Wings obscure yellow, faintly patterned with light brown, including the long stigma, cord and outer end of cell 1st M_2 ; veins pale brown, somewhat darker in the clouded areas. No macrotrichia in the wing cells. Venation: Sc_1 ending about opposite two-thirds R_{2+3+4} , the latter straight, subequal to R_{2+3} and R_3 ; Rs long; cell 1st M_2 long-rectangular, subequal to vein M_3 ; $m-cu$ close to fork of M .

Abdominal tergites brown, the disks of the intermediate ones vaguely patterned with yellow, sternites light yellow; segments eight and nine darker brown to form an inconspicuous ring; hypopygium brownish yellow. Male hypopygium with the interbase terminating in a narrow paddlelike blade, the tip obtuse.

HABITAT.—California (Monterey County).

HOLOTYPE, ♂, Salmon Creek, October 26, 1962 (Dennis Hynes); Hynes No. 69.

This distinct member of the genus is dedicated to the collector. The only other described western Nearctic species that lacks macrotrichia in the outer wing cells is *Lipsothrix fenderi* Alexander, readily told by the pale yellow coloration of the body and wings, coloration of the legs, short antennae, and the details of venation. The darkened wing pattern of the present fly likewise distinguishes it from all other American species of the genus.

Ormosia (Ormosia) burneyana, n.sp.

Allied to *pleuracantha*; general coloration of thorax brownish gray; antennae of male long, scape and pedicel yellow, flagellum black; segments strongly narrowed outwardly, provided with conspicuous erect yellow setae; male hypopygium with the mesal face of basistyle very unequally bispinous, both spines directed caudad; outer dististyle a flattened suboval plate, its outer angle scabrous, produced into two or three small thorns and a single long spine.

MALE.—Length about 4.5 - 4.7 mm.; wing 5.8 - 6 mm.; antenna about 2.1 - 2.2 mm.

FEMALE.—Length about 5.5 mm.; wing 6 mm.

Rostrum and palpi black. Antennae of male long, exceeding one-third the wing; scape and pedicel brownish yellow, flagellum black; flagellar segments enlarged basally, narrowed outwardly, surface with abundant erect yellow setae; verticils black, unilaterally arranged on outer face. Head light gray.

Pronotum light brown, lateral ends of scutellum yellow. Mesonotal praescutum gray with four more brownish gray stripes that are only vaguely indicated, the capillary median line still darker brown; posterior sclerites brownish gray, parascutella yellowish brown. Pleura brownish gray. Halteres with stem yellow, knob slightly darker. Legs with coxae obscure yellow, trochanters clear light yellow; femora brownish yellow, brighter at bases; tibiae and tarsi light brown. Wings weakly infuscated, stigma large, darker brown; a large cream-colored area before cord and stigma, with a smaller marking beyond the stigma; veins brown, more yellowed in the pale areas. Venation: Sc_1 ending just beyond R_2 , Sc_2 about opposite two-fifths Rs ; vein R_2 near fork of R_{2+3+4} ; $m-cu$ close to fork of M ; vein 2nd A sinuous.

Abdomen dark brown. Male hypopygium with the tergite large, lateral lobes scarcely developed, provided with very long decussate yellow setae. Basistyle on mesal face with a narrow plate that is very unequally bispinous, the long outer spine gently curved, the tiny more basal one straight, both spines directed caudad. Outer dististyle a flattened suboval plate, the outer angle produced into two or three small acute thorns, the surface roughened and short hairy; a much longer spine lying across the face of style; inner disti-

style horn-yellow, simple, narrowed to the obtuse tip, the outer half chiefly membrancus. Phallosome with gonapophyses appearing as long horn-yellow blades, narrowed very gradually into pale membrane, longer than the aedeagus.

HABITAT.—California (Shasta County).

HOLOTYPE, ♂, Burney Falls, August 1, 1958, swept from vegetation at foot of falls (Alexander). ALLOTYPE, ♀, with type. PARATOPOTYPES, 3 ♂ ♂.

Ormosia (*Ormosia*) *burneyana* is allied to but quite distinct from *O. (O.) pleuracantha* Alexander, differing in the structure of the hypopygium, especially the basistyle and outer dististyle.



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