

New Species of Crane-Flies from the United States and Canada

(*Tipulidæ*, *Diptera*).

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Most of the new species described in the present paper were found among material sent to the writer for identification. I am greatly indebted to Mr. W. L. McAtee and to Mr. F. R. Cole for the privilege of studying and describing many of the species included in this paper. Two interesting forms were collected in southern Illinois during the season of 1919 by Mr. Malloch and the writer.

Family Tipulidæ.

Subfamily Limnobiinæ.

Genus *Dicranomyia* Stephens.

Dicranomyia terræ-novæ sp. n.

General coloration gray, the præscutum with three dark brown stripes; antennæ dark brown throughout, the flagellar segments short-oval; wings with a heavy dark brown pattern, including five large costal blotches; *Sc* short, basal deflection of *Cul* far before the fork of *M*.

Male.—Length about 5.5 mm.; wing, 7.6 mm.

Female.—Length about 7.5 mm.; wing, 7.7 mm.

Rostrum dark brown; palpi brownish black. Antennæ dark brown, the flagellar segments short-oval, clothed with an abundant pale pubescence. Head bright silvery on the front, duller on the posterior parts of the head; a conspicuous brown line on the vertex.

Pronotum dark brown. Mesothorax very deep, the mesonotum gibbous. Mesonotal præscutum light gray with three conspicuous dark brown stripes, the broad median stripe indistinctly split by a capillary line; scutum gray with the lobes dark brown; scutellum and postnotum gray, the latter with a delicate brown median line. Pleura light gray with an indistinct brownish longitudinal stripe extending backward from the fore coxæ; a similar line on the mesosternum. Halteres yellow, the knobs dark brown. Legs with the coxæ small, gray; trochanters dull yellow; femora brownish yellow, the tips indistinctly darker; tibiæ and tarsi brown. Wings whitish subhyaline with a heavy brown and grayish pattern, as follows: five dark brown blotches along the costal margin, the first near the wing-base, the third at the tip of *Sc* and the origin of *Rs*, the fourth at the tip of *R1*, the last at the tip of *R2+3*, suffusing the wing-apex; the first three of these markings reach the costa and pass into cell *R*; the fourth (stigmatal) is rectangular, connected with a blotch at the fork of *Rs*; narrow brown seams along the cord and the outer end of cell *1st M2*; large brownish gray clouds along the margin at the ends of the veins and at the anal angle of the wings. Venation: *Sc* short, ending just beyond the origin of *Rs*, *Sc2* indistinct, apparently somewhat removed from the tip of *Sc1*, this distance about equal to the basal deflec-

tion of $M1+2$; basal deflection of $Cu1$ far before the fork of M , this distance about equal to the basal deflection of $M1+2$.

Abdomen dark brown, the posterior margins of the segments broadly silvery.

Habitat.—Newfoundland.

Holotype, ♀, Spruce Brook, August 8-12, 1912 (G. H. Englehardt), (No. F3192).

Allotopotype, ♂.

Paratopotype, ♀.

Type in the collection of the American Museum of Natural History.

Dicranomyia terra-novæ differs conspicuously from all the described American species of the genus. Its vicarious Palæarctic representative is *D. decora* (Staeger) of Northern Europe. Superficially it bears a marked resemblance to *Geranomyia rostrata* (Say), from which the structure of the mouth-parts and the slightly different venation will separate it.

Genus *Elliptera* Schiner.

Elliptera illini, sp. n.

General coloration brown, the pleura yellowish; cell $1st\ M2$ open.

Female.—Length about 5 mm.; wing, 6 mm.

Rostrum pale brown, the palpi dark brown. Antennæ with the scapal segments pale yellowish, the flagellum black; flagellar segments oval with a sparse white pubescence and verticils that are a little shorter than the segments. Head dark brownish black.

Thorax dull yellow, the thoracic dorsum with the stripes brown and entirely confluent, shiny, only the lateral margins of the præscutum yellowish. Halteres dark brown, the base of the stem more yellowish. Legs with the coxæ and trochanters dull yellow; remainder of the legs brown, the base of the femora paler. Wings gray, the stigma indistinct; veins dark brown. Venation: Sc rather short, ending about opposite two-thirds the length of the long sector; $Sc2$ proximad of the origin of the sector, the distance about equal to the basal deflection of $Cu1$; basal deflection of $R4+5$ almost square and in one wing of the type strongly spurred at the angle; cell $1st\ M2$ open by the atrophy of the outer deflection of $M3$, $M1+2$ before m about one-half that beyond this cross-vein; basal deflection of $Cu1$ just before the fork of M .

Abdominal tergites dark brown, the sternites yellowish.

Habitat.—Illinois.

Holotype, ♀, Makanda, Jackson County, June 4, 1919 (Alexander).

Type in the collection of the Illinois State Natural History Survey.

The unique type of *Elliptera illini* was found in the "Ozark" region of Illinois while Mr. Malloch and the writer were engaged in an entomological survey of this section. The genus *Elliptera* was hitherto represented by two species from Europe and two species from North America west of the Rockies. The occurrence of the genus east of the Mississippi River was quite unexpected and breaks the hitherto discontinuous distribution of this curious genus of crane-flies. The present species differs from its American relatives in the open cell $1st\ M2$, a character possessed by both of the European forms.

Genus *Orimarga* Osten Sacken.*Orimarga wetmorei* sp. n.

General coloration black; thoracic pleura and lateral margin of the præscutum striped with silvery; legs pale yellowish brown, the tips of the femora a little paler; wings subhyaline, the veins pale brown; tip of *RI* atrophied or indistinct; deflection of *R4+5* very long.

Sex, female?—wing, about 4 mm.

The type is badly discolored. The general coloration is a dark brownish black; basal segments of the antennæ paler, the flagellar segments nearly globular.

The mesonotum has the extreme lateral margins of the præscutum narrowly silvery, the pleura with a broad silvery longitudinal stripe, this type of coloration being similar to that in *O. argenteopleura*. Legs light yellowish brown, the tips of the femora indistinctly paler; tarsi darker. Wings subhyaline, the veins pale brown, more yellowish along the costal margin. Venation: *Sc* moderately long, ending at about one-third the length of the long sector; *Rs* strongly arcuated at its origin; tip of *RI* atrophied or retreated back almost to the tip of *Sc1*; *r* very long and strongly arcuated; basal deflection of *R4+5* very long, strongly arcuated at its origin, more than half the length of *Rs*; cell *M3* deep; *r-m* far beyond *r*.

Abdomen dark brownish black, the apex broken.

Habitat.—Florida.

Holotype, Sex?, Paradise Key, February 22, 1919 (Alex Wetmore).

Type in the collection of the United States Biological Survey.

O. wetmorei is the sixth American species to be described, the second from the United States. The fly differs conspicuously from *O. arizonensis* Coq. (Arizona) in the coloration of the legs and body and in the venation. It is much more like *O. argenteopleura* Alex. (Guatemala) which has the thorax similarly colored; this latter species is considerably larger, with dark brown legs and a very distinct venation (tip of *RI* short, persistent; basal deflection of *R4+5* short).

The species is dedicated to the collector, Alex Wetmore.

Genus *Erioptera* Meigen.*Erioptera (Erioptera) oregonensis*, sp. n.

Size large (wing of the male over 7 mm.); general coloration brown, including the halteres; wings with a strong brownish suffusion.

Male.—Length, 6 mm.; wing, 7.3 mm.

Rostrum and palpi dark brown. Antennæ dark brown, moderately elongate, clothed with a dense white pubescence, the verticils of the more terminal segments very long. Head dark brown, more grayish brown around the eyes.

Mesonotum dark brown with indistinct stripes on the præscutum, the lateral margins of which are indistinctly paler; humeral angles not noticeably brightened; tuberculate pits small, widely separated; scutum, scutellum and postnotum sparsely yellowish gray pruinose. Pleura dark brownish black, gray pruinose. Halteres long and slender, dark brown, only the base of the stem a little brightened. Legs with the coxæ dark, grayish pruinose; remainder of the legs dark brownish black, only the trochanters and the bases of the femora a little brighter. Wings with a strong grayish

brown suffusion; stigma dark brown; an indistinct brown cloud along *r-m* and the deflection of *R4+5*; veins dark brown. Venation as in the subgenus, the *2nd Anal* vein strongly sinuate.

Abdomen dark brownish black with a paler brown pollen. Hypopygium a little brighter; pleurites short and stout, sparsely setigerous; two pleural appendages, the outer appendage larger, the outer end flattened and enlarged, along the margin with four parallel rows of fine comb-like points; inner appendage paddle-like, the blade suddenly enlarged, provided with a few setigerous punctures, at the extreme tip with an additional, powerful, curved bristle. Penis-guard straight, tapering gradually to the blunt tip; gonapophyses with the apices produced laterad into conspicuous triangular blades with the points directed laterad.

Habitat.—Oregon.

Holotype, ♂, Tillamook, March 26, 1919, (A. C. Burrill).

Genus *Ormosia* Rondani.

Ormosia subcornuta, sp. n.

Belongs to the *meigenii* group; closely allied to *O. cornuta* (Doane) but the veins stouter, the stigma distinct, and the details of the male hypopygium very different.

Male.—Length, about 3.5–3.8 mm.; wing, 4.3–4.7 mm.

Female.—Length, about 3.8–4 mm.; wing, 5 mm.

Rostrum and palpi dark brown. Antennæ moderately elongate, dark brownish black, the scapal segments slightly paler brown. Head gray, provided with conspicuous yellow setæ.

Thoracic dorsum brownish gray without distinct stripes, the lateral margins more yellowish; tuberculate pits shiny black, located close together, the distance between them less than the diameter of one. Pleura brown with a strong gray pruinosity; a large tuft of yellow setæ between the base of the wings and the base of the halteres and a second group immediately ventrad of the halteres. Halteres yellow. Legs with the coxæ dark, gray pruinose; trochanters dull brown; remainder of the legs dark brown, the bases of the femora a little brighter. Wings subhyaline; stigma large, dark brown; veins stout, dark brown. Venation: cell *1st M2* open by the atrophy of the outer deflection of *M3*; *2nd Anal* vein slightly sinuous on its distal half, converging toward the *1st Anal* vein.

Abdomen dark brown. Male hypopygium with the pleurites stout, provided with numerous conspicuous setigerous tubercles that bear long yellowish setæ which become more elongate and stouter toward the tips of the pleurites; outer pleural appendage subglobular, armed with from 4 to 8 powerful, acute spines, the terminal spine large, along the outer face with microscopic, appressed denticles, the basal spine on the inner side of the appendage largest, strongly incurved; inner pleural appendage long, slender, with a strong spine before the tip to produce a bifid appearance. The most lateral pair of gonapophyses are sinuous, with a group of two or three teeth or spines on the inner face some distance before the tip, the slender apex beyond these slightly curved; the proximal pair of gonapophyses are almost straight, very slender, the tip with numerous indistinct denticles, at the extreme base with a few conspicuous spines; an additional pair of gonapophyses whose apices are conspicuously flattened, with the point of the blade directed laterad and slightly cephalad. Ninth sternite

with a broad spatulate blade, as in the *meigenii* group of this genus, the apex deeply notched medially.

Habitat.—Oregon.

Holotype, ♂, Forest Grove, March 26, 1919, (F. R. Cole).

Allotopotype, ♀.

Paratopotypes, 2 ♂s; paratypes, 1 ♂, 1 ♀, Hillsboro, April 1, 1919, (F. R. Cole).

This little species is evidently the Western representative of the common *O. meigenii* (O. S.) of the Eastern States, its general appearance being very like that species. In the structure of the male hypopygium, however, it runs closes to *O. cornuta* (Doane), which may be told by the different color of the wings and the structure of the hypopygium.

Genus *Gonomyia* Meigen.

Gonomyia (Gonomyia) coloradica, sp. n.

Belong to the *blanda* group, closest to *mathesoni* Alex.; general coloration yellowish, the præscutum with three broad, confluent stripes of reddish brown; wings with the petiole of cell *M2* long; male hypopygium with the structural details very different from those in *G. mathesoni*.

Male.—Length, about 4.5 mm.; wing about 6 mm.

Rostrum, palpi and antennæ dark brown. Head dark.

Pronotal scutum and the collare dark brown; pronotal scutellum pale. Mesonotal præscutum with three broad, reddish-brown confluent stripes, the humeral regions cephalad of the lateral stripes pale; scutellum pale. Pleura pale, indistinctly striped with brown. Halteres pale, the knobs dark brown. Legs with the coxæ and trochanters pale; femora light brown; remainder of the legs broken. Wings subhyaline, unspotted; stigma lacking; veins brown. Venation: almost as in *G. mathesoni* with the following details different: *R2* very oblique and apparently contiguous with the tip of *R1*; *R2+3* not angulated before the middle of its length and without a faint spur of *r* at this point; petiole of cell *M2* much longer, one-half longer than the fused portion of *Cu1* and *M*.

Abdomen light brown. Male hypopygium generally similar to that of *G. mathesoni*, differing as follows: The bifid pleural appendage is very similar in the two species, in the present species with the needle-like tip of the longest arm abruptly pale. The long, sinuous appendage in *mathesoni* is here represented by two, the longer of which is pale throughout, flattened, the long tip acicular and almost straight; the shorter appendage is flattened, before the tip a little expanded, with a long, slender, curved black-tipped apex. Near the base of these pleural appendages is a flattened subtriangular lobe which is covered with an abundance of short setæ; in *G. mathesoni*, this appendage is very small, cylindrical, with but few setæ and with a distinct finger-like spinous lobe on one side. Penis-guard distinctly trifold at its apex, the lateral black spines directed almost caudad, setigerous at their bases; a shorter median pale lobe.

Habitat.—Colorado.

Holotype, ♂, Longview, June 24, 1916 (E. C. Jackson).

Type in the collection of the United States Biological Survey.

Genus *Phyllolabis* Osten Sacken.*Phyllolabis latifolia*, sp. n.

General coloration light gray; wings pale gray, the stigma pale grayish brown; $R2+3$ shorter than $R3$ alone; cell $1st\ M2$ short; male hypopygium yellow with the foliaceous appendage of the eighth sternite very broad and but indistinctly bifid at its tip.

Male.—Length about 6.5 mm.; wing, 7.5 mm.

Rostrum dark brown, heavily gray pruinose above; mouth-parts reddish brown; palpi dark brown. Antennæ moderately elongate, dark brown throughout, the flagellar segments long-oval, provided with venticils that are but little shorter than the segments. Head light gray with an indistinct black median line.

Pronotum rather large, heavily light gray pruinose. Mesonotal præscutum brownish gray pruinose without distinct stripes; pseudosutural foveæ black, short-triangular; tuberculate pits not evident; remainder of the mesonotum gray pruinose, the scutellum more brownish. Pleura clear light gray. Halteres pale. Legs with the coxæ and trochanters pale brownish yellow; remainder of the legs dark brown, the bases of the femora paler. Wings pale gray; stigma rather indistinct, pale grayish brown; veins dark brown; *Sc* and the abortive vein behind *Cu* more yellowish. Venation similar to *P. claviger* but $R2+3$ shorter, less than $R3$ alone; veins $R2$ and $R3$ more divergent, $R2$ at the wing-margin being distinctly closer to $R1$ than to $R3$; cell $1st\ M2$ shorter, especially the outer deflection of $M3$.

Abdomen brown, sparsely gray pruinose. Hypopygium light yellow, including the pleurites and pleural appendages. Genitalia similar to *P. claviger*, differing as follows: outer angle of the pleurite much longer, projecting conspicuously beyond the pleural appendages; dorsal pleural appendage not slender and strongly bent at mid-length but very broad and flattened, roughly subtriangular with the base narrowest. Foliaceous appendage of the eighth sternite very broad and flattened, widest at the base, thence with the sides almost parallel slightly expanded at the distal end, the caudal margin of this leaf-like lobe slightly concave, feebly or indistinctly notched medially.

Habitat.—Oregon.

Holotype, ♂, Forest Grove, March 28, 1919 (F. R. Cole).

Genus *Tricyphona* Zetterstedt.*Tricyphona sparsipuncta*, sp. n.

Close to *T. septentrionalis* Bergr.; median præscutal stripe split by a pale line; wings subhyaline, the costal region more yellowish; *r-m* connecting $R4+5$ and $M1+2$.

Female.—Length, 7.5—8.8 mm.; wing 9.2—11 mm.

Rostrum very short, transverse, dark brown, sparsely gray pruinose, the anterior margin with a row of a few long yellowish bristles; mouth-parts and palpi dark brown. Antennæ dark brownish black, the basal four or five segments enlarged and very crowded as in this group of species. Head dark brown above, the front and a narrow margin around the eyes and across the anterior part of the vertex light gray.

Mesonotum very high and gibbous. Mesonotal præscutum light grayish yellow, with three dark brownish stripes, the median stripe split by an indistinct pale capil-

lary line that is more distinct in front; the sides of the median stripe are nearly parallel; lateral stripes narrow, their anterior ends subacute; scutum with the lobes marked with brown; scutellum light gray. Pleura dark brown, gray pruinose. Halteres pale yellowish brown, the knobs dark brown. Legs with the coxæ brown on the outer face; trochanters dull yellow; femora and tibiæ dull yellow, tipped with dark brown; tarsi dark brown, the base of the metatarsi paler. Wings subhyaline, the costal and subcostal cells more yellowish; stigma oval, dark brown, paler distally; sparse brown clouds along the cord, at the fork of $R4+5$, along the outer end of cell $1st\ M2$ and, less distinctly, at the base of the sector; veins dark brown, Sc more yellowish. Venation: The distance between $Sc2$ and the origin of the sector shorter than the straight portion of the sector alone; Rs angulated and spurred at its origin; upward deflection of $R2$ slightly oblique, inserted in $R1$ rather far before its tip, so that $R1+R2$ is greater than the deflection of $R2$ alone; petiole of cell $R4$ short, about one-fourth longer than $r-m$; $r-m$ inserted between $R4+5$ and $M1+2$; petiole of cell $M1$ longer than this cell.

Abdomen dark brown; valves of the ovipositor reddish brown, strongly compressed, slightly upcurved at the tip.

Habitat.—Oregon.

Holotype, ♀, Hillsboro, April 1, 1919 (F. R. Cole).

Paratype, ♀, Corvallis, May 14, 1917 (Moulton).

The type is much larger than the paratype but undoubtedly refers to the same species. The fly is closest to *T. septentrionalis* Berg. (Alaska) in its spotted wings but may be distinguished by the colorational and venational details as described above.

Subfamily Tipulinæ.

Genus *Tipula* Linnæus.

Tipula mallochi, sp. n.

Belongs to the *submaculata* group; close to *T. submaculata* Lw.; male hypopygium with the horns of the tergite short, outer pleural appendage not bifid, gonapophyses short, eighth sternite with two powerful decussate bristles.

Male.—Length, 15 mm.; wing, 17—17.4 mm.

Female.—Length, 20 mm.; wing, 18.5—19 mm.

Frontal prolongation of the head brown, more yellowish above; palpi pale brown. Antennæ bicolorous, the flagellum with the basal enlargement of each segment black, the remainder light yellow, on the apical segments a little more infuscated. Head yellowish brown with a sparse grayish bloom; a capillary dark brown median line.

Mesonotal præscutum dull brownish yellow with four rather narrow reddish brown stripes, the remainder of the dorsum yellowish. Pleura pale yellow, whitish pollinose. Halteres pale, the knobs dark brown. Legs with the coxæ pale whitish yellow; trochanters yellow; remainder of the legs darker. Wings pale gray, the base of the wings and the costal region more yellowish; stigma brown; a brown cloud at the origin of the sector; tip of the wing indistinctly darkened; obliterative area before the cord in the base of cell $R2$.

Abdominal tergites dull brownish yellow, on the sixth to ninth tergites dark brown; the caudal margins narrowly, the lateral margins more broadly, silvery;

segments two to five with a narrow longitudinal brown sublateral streak; sternites brown, the caudal margins of the segments pale. Hypopygium generally similar to *T. submaculata*, differing as follows: Ninth tergite with the lateral horns very short and broad, the tips acute, not long and tapering as in *submaculata*; outer pleural appendage short and broadly flattened, the apex subtruncated, with a few coarse setigerous teeth, in *submaculata* this appendage is more slender, tapering to the acute point, at about midlength on the outer margin with a prominent spine to produce a bifid appearance; gonapophyses broad and flattened at the base, the slender tips short, not long and sinuous as in *submaculata*; eighth sternite with a pair of strong reddish fused bristles that are decussate, in addition to the smaller setæ. In the female, the sixth and seventh tergites are dark brown, the ovipositor acute, the tergal valves being especially long and slender.

Habitat.—Illinois.

Holotype, ♂, Alto Pass, Union County, June 5, 1919 (Alexander).

Allotopotype, ♀.

Paratopotypes, 4 ♂ ♀; paratypes, 20 ♂ ♀, Makanda, Jackson County, June 4, 5, 1919 (Alexander and Malloch); 5 ♂ ♀, Dubois, Washington County, June 3, 1919 (Malloch).

Type in the collection of the Illinois State Natural History Survey.

Tipula mallochi is common in the "Ozark" region of southern Illinois during early June, when it flies with other species of the genus as *T. submaculata* Lw., *T. tuscarora* Alex., *T. translucida* Doane, *T. morrisoni* Alex., *T. mingwe* Alex., *T. umbrosa* Lw., *T. flavoumbrosa* Alex., *T. fuliginosa* Say, and, in proximity of low wet cliffs, with *T. ignobilis* Lw.