

## NEW NEARCTIC CRANE-FLIES (TIPULIDAE, DIPTERA). PART XVI.

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The preceding part under this general title was published in 1941 (Can. Ent., 73:85-90). The majority of the novelties discussed herewith were collected by myself in the mountains of Colorado; for other specimens I am indebted to Professor Harry C. Severin, South Dakota State College; Dr. Charles D. Michener, University of California; and Dr. Alan Stone of the United States National Museum. Where not indicated to the contrary the types of the novelties are preserved in my extensive collection of these flies.

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

Allied to *subcinerea*; general coloration of notum gray, the praescutum with four darker gray stripes that are narrowly bordered by brown, the mesal edges of the intermediate pair of stripes short; pleura variegated dark brownish gray and pale; wings pale brown, patterned with darker brown and subhyaline areas;  $R_{4+5}$  nearly straight; male hypopygium with the tergal lobes terminating in spinous points; outer dististyle very large, pale, conspicuously bilobed; inner dististyle with the rostral prolongation a long narrow blade; ovipositor with cerci very long and straight.

*Male.* Length about 22 mm.; wing 20 mm.; antenna about 4.5 mm.

*Female.* Length about 28 mm.; wing 22 mm.

Frontal prolongation of head elongate, reddish brown on sides, darker above; nasus stout; palpi brown. Antennae relatively short; basal three segments obscure brownish yellow, succeeding segments more uniformly blackened; flagellar segments with poorly developed basal enlargements; longest verticils exceeding the segments in length. Head gray with a capillary dark brown median vitta; vertical tubercle low and inconspicuous.

Pronotum narrowly darkened medially above, obscure yellow on sides. Mesonotal praescutum light grey with four darker grey stripes that are narrowly bordered by brown lines, the mesal edges of the intermediate pair of stripes indicated only on the cephalic half of sclerite; scutum dark gray, the median region only a trifle paler; scutellum dark gray, slightly darker medially; post-notum clear light gray, with a capillary dark brown median line. Pleura dark brownish gray, extensively variegated with paler on the dorsal sternopleurite, ventral pteropleurite, dorsal meron, hypopleura and ventral pleurotergite. Halteres yellow, the knob more or less darkened basally, the apex pale. Legs with the coxae brownish gray; trochanters pale brown to yellowish brown; femora brownish yellow, the tips blackened, the amount subequal on all legs; tibiae yellow, the tips narrowly infuscated; tarsi passing into brownish black. Wings with the ground color pale brown, restrictedly variegated with darker brown and more extensively with subhyaline; the darker spots include a postarcular darkening in cells *R* and *M*; a small spot at origin of *Rs*; stigma; paler brown seams along cord and a conspicuous cloud at near midlength of cell *Cu*, crossing vein *1st A* into the cell; post-stigmal pale stripe restricted; more than the outer fourth of cell  $R_5$  pale; conspicuous pale marginal spots in cells  $M_1$ , *2nd M*,  $M_3$ ,  $M_4$ , two in *1st A*, one in *2nd A*, none in *Cu*; veins brown. Venation: Vein  $R_{4+5}$  nearly straight; *Rs* from one-third to one-half longer than *m-cu*; cell  $M_1$  short-petiolate.

Abdomen with basal tergites dark brown; succeeding segments orange-fulvous, with narrow brown sublateral stripes and more conspicuous buffy lateral borders; no darkened median stripe on either the tergites or sternites; hypopygium chiefly dark brown. Ovipositor with the cerci long and straight; hypovalvae

much shorter, darkened basally, yellow at tips. Male hypopygium with the ninth tergite transverse, narrowed apically, the caudal margin with a broad U-shaped notch, each lateral lobe produced into a slender spinous point directed caudad and slightly mesad; on ventral surface, on either side of median line, with a flattened sclerotized plate. Outer dististyle very large, conspicuously bilobed, entirely pale. Inner dististyle with the basal portion quadrate, the long narrow beak produced at a right angle from the base into a compressed blade, the apex obtuse; sensory areas restricted in number, placed in a group on outer margin of style at base of rostrum; outer margin of style with numerous coarse erect setae. Ninth sternite with an unusually short flattened lobe or open tube. Eighth sternite extensive, its caudal margin broadly convex, unarmed.

*Habitat.* Colorado (Eastern Rockies).

*Holotype.* ♂, Green Mountain Falls, Ute Pass, above Manitou, altitude 8,000 feet, June 28, 1934 (C. P. Alexander). *Allotopotype*, ♀.

*Tipula (Bellardina) faustina* is most readily told from the numerous allied species in the Rocky and Sierra Madre Mountains by the structure of the male hypopygium, especially the tergite and dististyles. It is most similar to *T. (B.) gothicana* Alexander and *T. (B.) subcinerea* Doane yet very distinct. The recent accession of many new species from Eastern Asia and Tropical America makes it appear unwise to try to maintain the subgenus *Sinotipula* Alexander, 1935, as distinct from *Bellardina* Edwards, 1931. The essential characters of the latter group of a short *Rs* and glabrous veins beyond the cord of the wing break down among the novelties above mentioned.

#### ***Tipula (Bellardina) ramona* n. sp.**

Allied to *subcinerea*; size large (wing, male, over 23 mm.); mesonotum gray, the praescutal stripes conspicuously bordered by dark brown; tips of femora narrowly blackened; wings brownish gray, variegated with darker brown and whitish subhyaline areas; abdominal tergites conspicuously orange with three broken black stripes; male hypopygium large, the caudal margin of tergite with a deep U-shaped notch; outer dististyle blackened, provided with long yellow setae; outer lobe of inner dististyle large.

*Male.* Length about 23-24 mm.; wing 23-25 mm.; antenna about 4.3-4.4 mm.

Frontal prolongation of head relatively long, dark brown, sparsely pruinose; nasus elongate; palpi black. Antennae (male) of moderate length; scape brownish gray, pedicel obscure yellow, flagellum black; flagellar segments with basal enlargements only slightly developed; longest verticils subequal in length to the segments. Head gray, with a dark brown median stripe extending from the summit of the small vertical tubercle to the occiput; remainder of vertex with numerous dark setigerous punctures.

Pronotum brown, variegated with darker. Mesonotal praescutum light gray with four slightly darker gray stripes that are chiefly delimited by conspicuous dark brown borders, the lateral margins of the intermediate pair and the mesal margins of the lateral stripes broader and narrowly confluent in front; median dark vitta very narrow, capillary; praescutum behind the pseudosutural foveae more or less distinctly darkened; posterior sclerites of notum gray, patterned with brown, including the centers of the scutal lobes and a nearly continuous capillary vitta extending from the suture to the abdomen. Pleura light gray, variegated with darker gray and more yellowish areas. Halteres with stem yellow, knob dark brown. Legs with the coxae gray; trochanters yellow; femora obscure brownish yellow, the tips narrowly blackened, the amount subequal on all legs; tibiae and basitarsi brownish yellow, the tips very narrowly infuscated; remainder of tarsi dark brown. Wings with the ground color brownish gray,

variegated with darker brown and whitish subhyaline markings; the darker brown includes areas at origin of *Rs*; stigma, and a confluent seam on anterior cord; two areas in outer half of cell *M* adjoining vein *Cu*; two similar but smaller areas in basal half of cell *Cu*; two darkenings in cell *1st A* adjoining vein *2nd A*; wing-tip paler, with restricted marginal pale areas in cells  $R_5$  to  $M_4$  inclusive, in the medial cells isolated and not reaching the actual margin of wing; extensive pale brown areas in cells *R*, outer half of *M*, and *1st A*, these vaguely bordered by darker brown; cell *2nd A* almost uniformly pale brown; veins brown. Venation: *Rs* about two and one-half times *m-cu*; cell  $R_3$  slightly constricted beyond base; basal section of  $R_4+5$  subequal to *r-m*.

Abdominal tergites with the median portion conspicuously orange, with broken median and sublateral black stripes; first tergite and lateral margins of tergites two and three light gray; succeeding tergites with lateral borders more narrowly buffy; sternites varying from obscure yellow to gray, the basal segments with a relatively indistinct median brown stripe, the outer segments more uniformly dark brownish gray; hypopygium dark brown, the outer portions paler, Male hypopygium large and conspicuous; sutures between tergite, sternite and basistyle all deep and complete. Ninth tergite large, the posterior border with a deep U-shaped notch, the lateral lobes oblique with their margins thickened and with a slight lower flange; base of notch with a further tiny U-shaped emargination. Outer dististyle blackened, provided with long yellow setae. Inner dististyle complex, with a very large outer lobe that bears the usual area of sensory pits, this lobe more than twice as extensive as the outer dististyle; main body of style very long and narrow, extended into a narrow beak and backward into an obtuse compressed blade. Ninth sternite with a restricted brush of long setae at outer end of lobes, with a dense brush of more delicate setae at base of notch. Eighth sternite unarmed.

*Habitat.* Colorado (Eastern Rockies).

*Holotype.* ♂, North Cheyenne Canyon, Colorado Springs, altitude about 7,000 feet, June 27, 1934 (C. P. Alexander). *Paratopotype*, 1 ♂.

The nearest relatives of the present fly are *Tipula (Bellardina) commiscibilis* Doane and *T. (B.) subcinerea* Doane, both of which are readily told by the very different male hypopygia. The type locality is not distant from the original grave of Helen Hunt Jackson (1831-1885) on Inspiration Point, where the novel "Ramona" was written.

### ***Tipula (Bellardina) pura* n. sp.**

Allied to *rupicola*; size relatively small (wing, male, 19 mm.); general coloration dark gray with four still darker gray stripes that are bordered by dark brown; femora with obscure yellow subterminal rings; wings pale brown, conspicuously patterned with darker brown and whitish subhyaline; vein  $R_4+5$  strongly arched immediately beyond midlength, narrowing cell  $R_3$ ; male hypopygium with the outer dististyle pale, of very irregular conformation, at apex divided into two parts, the upper of which is a blackened spine; notch of ninth sternite with a long conspicuous median tube.

*Male.* Length about 17 mm.; wing 19 mm.; antenna about 3.5 mm.

*Female.* Length about 23 mm.; wing 23 mm.

Frontal prolongation of head brown; nasus conspicuous; palpi black. Antennae with scape obscure brownish yellow, pedicel clear yellow, flagellum dark; flagellar segments with scarcely developed basal swellings; longest verticils subequal to the segments. Head reddish brown, gray pruinose, with a capillary dark brown vitta back from the low vertical tubercle.

Pronotum brownish gray. Mesonotal praescutum with the ground color dark gray, with four deep reddish brown stripes that are presumably heavily

gray pruinose in fresh specimens; in female all stripes are clear gray, narrowly and completely bordered by dark brown, the two inner margins very close together though separated for most of their lengths; setigerous punctures faintly darkened; scutum with median area light gray, each lobe with two dark gray areas that are narrowly bordered by brown; scutellum and mediotergite light gray, with a continuous broader median vitta. Pleura variegated light and dark brownish gray over a reddish brown ground; dorsopleural membrane yellow. Halteres dusky, the base of stem narrowly pale, the apex of knob restrictedly brightened. Legs with the coxae gray; trochanters yellow; femora brownish yellow, the tips rather narrowly blackened, preceded by a slightly narrower obscure yellow ring; tibiae yellowish brown, the tips darker; tarsi passing into dark brown; claws simple. Wings with the ground color pale brown, conspicuously patterned with darker brown and whitish subhyaline areas; the darker markings include a postarcular area; a small spot at origin of  $R_s$ ; the oval stigma; a continuous seam at outer end of cell  $1st\ M_2$  and the petiole of cell  $M_1$ ; a cloud at the narrowed part of cell  $R_3$ ; small brown marginal spots at ends of veins  $R_4+5$  to  $2nd\ A$ , inclusive, with a whitish marginal area between each pair of spots; three dark markings in basal two-thirds of cell  $Cu$ , the outermost crossing vein  $Cu$  into cell  $M$ ; the whitish areas include a nearly complete band before cord, extending from vein  $R$  to the posterior margin; an incomplete band beyond stigma, involving almost all of cell  $R_3$ ; outer medial cells almost entirely whitened, especially in female; basal third of cell  $2nd\ A$  white; veins brown. Venation:  $R_s$  short, subequal to  $m-cu$ ; distal section of  $R_4+5$  strongly arched immediately beyond midlength, narrowing cell  $R_3$  at this point; petiole of cell  $M_1$  subequal to or shorter than  $m$ .

Abdominal tergites yellowish orange, the first segment pruinose; a scarcely indicated darker median stripe and very conspicuous, entire, brownish black, sublateral stripes; lateral margins buffy gray; sternites obscure orange, the outer segments with blackened lateral borders; hypopygium dark brown, the outer dististyles obscure yellow. Ovipositor with cerci elongate, slender, upcurved at near three-fourth the length; hypovalvae short, the truncated tips blackened. Male hypopygium with the suture between tergite and sternite distinct; basistyle reduced in size, the sutures scarcely indicated. Ninth tergite pale, the caudal margin with a low rounded lobe on either side of the median line. Outer dististyle pale, of very irregular conformation, appearing as a short-stemmed rod, at apex split into a flattened-compressed blade and a more dorsal acute blackened spine; at base of style with a subcircular flattened flange. Inner dististyle appearing as a narrow clavate blade that is slightly less extensive than the outer dististyle. Notch of ninth sternite with a long conspicuous open median tube that is produced by the upcurved margins of paired appendages as in *rupicola* and *albimacula*.

*Habitat.* Colorado (Eastern Rockies).

*Holotype.* ♂, Salida, altitude 7,500 feet, June 30, 1934 (C. P. Alexander).

*Allotype.* ♀, Green Mountain Falls, Ute Pass. above Manitou, altitude 8,000 feet, June 26, 1934 (C. P. Alexander).

The curious elongate tube of the ninth sternite of the male hypopygium allies this fly with *Tipula (Bellardina) albimacula* Doane and *T. (B.) rupicola* Doane, both of Arizona, despite the other very different structural details of the male hypopygium.

### ***Pedicia (Pedicia) falcifera* n. sp.**

Wings strongly falcate in outline; dark seam along vein  $Cu_1$  not reaching wing margin; cell  $1st\ M_2$  longer than in *albivitta*, the second section of vein  $M_1+2$  the longest element; cell  $M_4$  deep, nearly twice as long as  $m-cu$ ; dark areas

of abdominal tergites and sternites broadly interrupted at incisures by fulvous orange.

*Sex?* Length of wing 21 mm.

Rostrum dark gray; palpi black, elongate as in the subgenus. Antennae black, the scape pruinose, the outer flagellar segments passing into brownish yellow; outer flagellar segments relatively long, with very long verticils. Head dark gray.

Cervical region dark brown. Pronotum light orange or fulvous, darkened along cephalic margin and lateral borders. Mesonotal praescutum clear light gray with four narrow grayish brown stripes, the intermediate pair darker brown in front, separated by a capillary line of the ground color; lateral stripes clearer gray, narrowed at anterior ends, crossing the suture onto the cephalic portion of the scutal lobes, each lobe with a much larger dark gray central area; scutellum light gray, the parascutella obscure brownish yellow, narrowly dark brown adjoining the scutellum; mediotergite gray, the cephalic lateral portion restrictedly darkened. Pleura light ashy gray, the dorsopleural region reddish brown, with a large brownish black area at and immediately behind the spiracle; pleurotergite with a more or less distinct dark area extending from the wing-root ventrad to beneath the base of halteres. Halteres relatively long, pale yellow. Legs with the coxae light gray; trochanters obscure yellow; femora obscure yellow, the tips narrowly brownish black, the amount subequal on all legs and involving the distal seventh or eighth of the segment; tibiae whitish, the tips darkened; remainder of tarsi obscure yellow, the outer segments infuscated. Wings subhyaline, with the usual dark pattern of the subgenus; cell *Sc* chiefly pale; pale area in outer end of cell  $R_1$  before the stigma extensive; basal darkening in cell *Cu* short; dark seam along vein  $Cu_1$  not quite reaching the wing margin, interrupted at beyond four-fifths the length; veins pale, brownish yellow in the patterned areas. Wing-outline strongly falcate, relatively narrow, the margin of the medial field strongly incurved to make the outer radial field unusually projecting. Venation: Cell *1st M*<sub>2</sub> much longer than in *albitvitta*, the second section of  $M_1+2$  the longest element; cell  $M_4$  deep, nearly twice as long as *m-cu*.

Abdominal tergites light gray with conspicuous long-rectangular darker gray areas that are narrowly bordered by black, more extensively so behind; incisures, including the narrow posterior portions of the segments and the more extensive basal rings fulvous orange; on basal sternites the median areas are similar but slightly longer and narrowed posteriorly; abdomen broken beyond the fourth segment.

*Habitat.* South Dakota (Black Hills).

*Holotype.* *Sex?* Custer, July 22, 1924 (H); South Dakota State College Collection, through Professor Severin.

*Pedicia (Pedicia) falcifera* is most similar to *P. (P.) albitvitta* Walker, of northeastern North America, differing especially in the details of wing-pattern, the even more strongly falcate wings, and in the venation, especially the longer cells *1st M*<sub>2</sub> and  $M_4$ . The only other species of *Pedicia* with such strongly falcate wings is *P. (P.) falcata* Alexander, of the highest mountains of southeastern China (Fukien).

### ***Pedicia (Tricyphon-a) ampla truncata* n. subsp.**

*Male.* Length about 15 mm.; wing 14 mm.

*Female.* Length about 25 mm.; wing 18 mm.

Close to the typical form, *ampla* Doane, of British Columbia and the northwestern United States, differing especially in slight details of the male hypopygium. Median lobe of the ninth tergite long, very gradually narrowed outwardly, the apex truncate or virtually so, there being only a slight suggestion

of emargination on the extreme median portion. Female fully-winged. The pubescence of the eyes is virtually lacking whereas in the typical form this is unusually long and dense.

*Habitat.* California (South).

*Holotype.* ♂, Tahquitz Valley, San Jacinto Mts., June 3, 1940 (C. D. Michener). *Allotopotype.* ♀, in copula with type.

### *Chionea albertensis* n. sp.

Belongs to the *araneoides* group; antennae 11-segmented, the fusion-segment short-transverse, with eight simple segments beyond it; first flagellar segment beyond the fusion short and broad; general body coloration reddish brown, the pronotum and praescutum obscure yellow medially; halteres pale yellow; legs yellow, the tarsi more darkened; male hypopygium with the posterior border of tergite produced into small setiferous lobes on either side of a shallow median emargination; dististyle relatively stout, cultriform, at its base with a roughly oval, heavily blackened lobe or appendage; gonapophyses appearing as flattened yellow plates, their tips narrowly obtuse; aedeagus very long and slender, sinuous, at apex split into two slender pale blades.

*Male.* Length about 5.5 mm.; diameter across notum between halteres 1 mm.

Rostrum reddish brown; palpi darker brown. Antennae 11-segmented, there being eight segments beyond the short, transverse fusion-segment; scape brownish yellow, pedicel and fusion-segment darker brown, remainder of flagellum pale brown; first segment beyond the fusion short and broad, its transverse diameter greater than its length; second segment about two-thirds the length of the third; succeeding segments more elongate, the terminal one about two-thirds the length of the penultimate; verticils very long, exceeding the segments in length, placed at near midlength of the segment which is more or less incised at the point of insertion of the bristles. Head reddish brown, sparsely pruinose, especially in front.

Pronotum and praescutum obscure yellow medially, more reddish brown on either side of the median line, on the praescutum the lateral edges of the yellow stripe demarked by numerous long black setae; remainder of mesonotum light reddish brown; rudiments of wings distinctly present though minute, directed cephalad. Pleura uniformly reddish brown. Halteres pale yellow. Legs with the coxae reddish yellow; trochanters yellow; remainder of legs yellow, the tarsi more darkened; femora moderately incrassated.

Abdominal tergites reddish brown, the sternites and hypopygium clearer yellow; abdomen short and stout, the hypopygium massive. Male hypopygium with the ninth tergite having a small rounded lobe on either side of a shallow median emargination, each lobe provided with several long strong setae. Basistyle stout. Dististyle a relatively stout cultriform blade, the tip subacute; face of style at base with a roughly oval, heavily blackened lobe or appendage, with a few scattered setae immediately distad. Gonapophyses appearing as flattened yellow plates, the tips narrowly obtuse, the surface slightly wrinkled. Aedeagus unusually long and slender, sinuous, the apex split into two long, very slender, pale blades that are narrowed to acute hyaline points.

*Habitat.* Alberta.

*Holotype.* ♂, Banff, without further data; United States National Museum, through Dr. A. Stone.

Most similar to the northeastern Nearctic *Chionea primitiva* Alexander, which differs in the 12-segmented antennae that have the fusion-segment and the segment immediately beyond this elongate and entirely different in shape from the present fly. This latter species differs further from the insect here described

in the structure of the male hypopygium, especially in the tergite which is produced medially into a broad, low, setiferous lobe; the more slender dististyle with a conspicuous tooth on the mesal face at base but without the blackened lobe on face; the shorter aedeagus and the differently constructed gonapophyses. Kratochvil (Bull. Soc. Ent. France, 1936, 250) divided the western Palaearctic species of *Chionea* into two groups, the *Chioneae longicornae*, having nine or ten antennal segments and including the genotype, *C. araneoides* Dalman, and one further species; the second group, the *Chioneae brachycornae* (*brachycerae* Alexander) includes the remaining European species and has only six or seven antennal segments. In the Tipulidae it seems preferable to adhere to the policy of naming groups after the oldest and best-known species and consequently I am using the name *araneoides* group for the *Ch. longicornae* Kratochvil and the *valga* group for the *Ch. brachycornae* Kratochvil. The *araneoides* group in the Nearctic fauna includes only the two species, *C. primitiva* Alexander and the present fly.

### **Ormosia (Ormosia) viduata n. sp.**

Belongs to the *nigripila* group; general coloration of mesonotum almost uniform dark brown, the humeral region of praescutum a little reddened; pleura black; femora black, the bases narrowly brightened; tibiae and tarsi abruptly pale brown or yellowish brown; wings with a brownish tinge, very strongly so in the outer radial cells; male hypopygium with the gonapophyses bispinous at apex, the inner spine about twice as long as the outer.

*Male.* Length about 5 mm.; wing 5 mm.

Rostrum and palpi black. Antennae with basal segments yellow, the flagellum pale brown, the outer segments somewhat darker; antennae relatively long, if bent backward extending about to base of abdomen; basal flagellar segments oval, the outer segments becoming more elongate, the terminal segment longest; verticils elongate, unilaterally distributed; segments clothed with an abundant dense white pubescence. Head brownish gray; eyes relatively large.

Pronotum brown, the pretergites very pale yellow, the median portion dark brown. Mesonotum almost uniformly dark brown, the surface very sparsely pruinose, the humeral region of praescutum a little more reddened; scutellum slightly more castaneous than remainder of notum. Pleura black, the dorso-pleural membrane dusky. Halteres pale yellow throughout. Legs with the coxae infuscated, the apices of the middle pair more brightened; trochanters yellow; femora black, the bases narrowly brightened, including about the basal sixth or seventh; tibiae and tarsi abruptly pale brown or yellowish brown, the terminal tarsal segments more blackened. Wings with a brownish tinge, weak in the basal cells, much more evident in the outer radial field, paling behind in the outer medial field; stigma darkened, merging gradually with the adjoining membrane; veins brown, paling to yellow at wing-base. Numerous macrotrichia in cells of wing, becoming more sparse in proximal ends of basal cells. Venation:  $Sc_1$  ending opposite  $R_2$ ,  $Sc_2$  only a short distance beyond origin of  $R_s$  so  $Sc_1$  is very long, exceeding  $R_s$ ;  $R_2 +_3$  subequal in length to  $R_2$ ; cell 1st  $M_2$  small, closed; *m-cu* close to fork of  $M$ ; anal veins divergent, cell 2nd  $A$  very wide at near midlength.

Abdomen, including hypopygium, black. Male hypopygium of the usual type of the *nigripila* group. Outer blade of outer dististyle elongate, the spinous points concentrated on proximal two-thirds. Inner dististyle with four or five elongate setae near distal end. Gonapophyses flattened, bispinous at apex, the inner spine about twice as long as but more slender than the outer spine.

*Habitat.* Colorado (Southern Border).

*Holotype.* ♂, Cumbres Pass, altitude 9,500 feet, July 28, 1934 (C. P. Alexander).

The nearest ally of the present fly appears to be *Ormosia (Ormosia) pygmaea* (Alexander) of eastern North America. This has the male hypopygium generally similar but differs conspicuously in the coloration of the body, legs and wings. The general body coloration of the present fly is the darkest of any of the species of the group in North America.