

Schizura unicornis S. & A. Common in June.

Cerura scolopendrina Bdv. Two ♀, June 27, July 8. These would probably fall under *pluvialis* Dyar but according to Benjamin (Contr. V, 182) this is only a very minor variation of *scolopendrina*.

Cerura cinerea paradoxa Behr. One ♂, two ♀, June 26, July 2, 13. The ♂ matches Packard's figure of one of Behr's types very closely; the females show more distinct median banding and would probably fall under *placida* Dyar which is merely a form of *paradoxa*, picked out from some of Behr's specimens, and should not stand as a race.

THYATIRIDAE

Habrosyne chatfeldi Grt. One ♀, July 27. Probably only a western race of *scripta* Gosse and scarcely distinguishable.

Pseudothyatira cymatophoroides form *expultrix* Grt. Not rare in late June.

Euthyatira semicircularis griseor B. & McD. Not rare in late May and the first half of June. Some of the specimens are very dark.

LYMANTRIIDAE

Olene vagans willingi B. & McD. One ♂, July 5.

LASIOCAMPIDAE

Malacosoma disstria erosa Stretch. Two ♂, July 6, 8.

DREPANIDAE

Drepana arcuata siculifer Pack. One ♀, June 3.

(To be continued)

RECORDS AND DESCRIPTIONS OF CRANE-FLIES FROM ALBERTA (TIPULIDAE, DIPTERA). I.*

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In the present report, I have begun the consideration of the very extensive collections of crane-flies from Alberta that have been received from the Canadian National Collection, through Mr. Curran; the very extensive series collected by Mr. Owen Bryant; a series from Banff, collected by Mr. Garrett; and the collections of the University of Alberta, sent through the kindness of Professor Strickland. I wish to express my sincere thanks to all of the above mentioned gentlemen for this kind co-operation in making known the Tipulid fauna of Alberta, a list that will certainly exceed in numbers that of any other of the Canadian Provinces with the single exception of British Columbia.

In this paper, the collections made by Mr. Bryant in the plains country east of the mountains are considered. The chief collections were made at Edmonton, Bilby and on the Lesser Slave Lake. The numerous specimens labelled "Bilby" were taken at and near Bilby, 30 miles west of Edmonton, on the edge of the spruce and tamarack "Muskeg" country. The Slave Lake collections were made on the southern side of the Lesser Slave Lake. In this connection I quote Mr. Bryant as follows: "Bilby lies on a small lake about one and one-half miles long. This lake is rather shallow, with a muddy beach on the south side and a heavy stand of very large poplars growing nearly to the water's edge. Among the big poplars

*—Contribution from the Department of Entomology, Massachusetts Agricultural College.

are about half a dozen cottages used as a summer resort by Edmonton people. These poplars cast a dense shade, supporting a rank herbaceous growth, together with a few shrubs, as dogwoods, gooseberries, and others. Most of the large Tipulids were picked from the walls of the cottages, while others were obtained by sweeping this rank herbage. To the west is a spruce "Muskeg" and closer to the lake, a bog with cowslips and some reeds, partly shaded by trees. Southwest of the lake are some open "Muskegs" with scattered larches growing in deep sphagnum. West of the lake are thickets of young lodge-pole pine, with a few larger individuals."

"Lesser Slave Lake; collections made along the lake (altitude about 1800 feet). The Grizzly Mt. is the edge of a plateau forming the Swan Hills; on the mountain are forests of small spruce and some "Muskeg"; collections were made at approximately 3000 feet."

Most of the collections were thus made in the transition belt of poplar-savanna that forms such a large portion of north-central Alberta (*Naturalist's Guide to the Americas*, pp. 254-255; 1926). Nearly 70 species are recorded in the present paper, chiefly from Bilby. Many of the records add vastly to the known distribution of our eastern North American Tipulidae. The faunas of the fauna is overwhelmingly eastern, almost all of the species being found in north-eastern North America. A very few species (*Tipula barbata* Doane, *T. ingrata* Dietz, *T. commiscibilis* Doane, *T. pendulifera* Alex.) are members of the Rocky Mountain fauna, occurring in the mountains, as far south at least as Colorado. Others (as *Nephrotoma altissima* O.S., *Tipula appendiculata* Loew) have a more extensive range in western and north-western North America. A few are apparently more confined to the plains country of the central Provinces (as *Ptychoptera metallica* Walk., *Prionocera sordida* Loew, *Limonia dietziana*, n.n., *Limnophila harperi* Alex.). The western element is best shown by the occurrence of *Tricyphona constans* (Doane). The limits of distribution of the species herein described as new cannot be discussed at the present time but all will unquestionably have a much wider range than known at the present time.

I am very greatly indebted to Mr. Bryant for the privilege of retaining the types of the species described as new. A nearly complete collection of the species discussed herewith has been returned to Mr. Bryant.

PTYCHOPTERIDAE

Ptychoptera metallica Walk. Two specimens, Bilby, July 14-16, 1924. Originally described from St. Martin's Falls, Albany R., Ontario, but unrecognized in collections since the date of publication (1848).

TRICHOCERIDAE

Trichocera maculipennis Meig. Edmonton, May 21, 1924.

TIPULIDAE

TIPULINAE

Prionocera fuscipennis (Loew). Bilby, July 28, 1924.

Prionocera sordida (Loew). Bilby, June 8, 1924.

Prionocera dimidiata (Loew). Bilby, June 11-August 5, 1924.

Nephrotoma altissima (O.S.). Calgary, May 30, 1924; Bilby, July 3-August 1, 1924, the latter on fire-weed. I do not believe that *N. erythrophrys* (Will.) can be separated from *altissima*, being obviously a variant showing erythrism to a greater or less degree.

Nephrotoma ferruginea (Fabr.). Bilby, July 3-21, 1924.

Nephrotoma pedunculata (Loew). Bilby, July 7, 1924.

Nephrotoma occipitalis (Loew). Bilby, June 8-July 4, 1924.

Tipula pachyrhinoides Alex. Lesser Slave Lake, August 17-25, 1924.

Tipula mainensis Alex. Lesser Slave Lake, August 14-17, 1924.

Tipula umbrosa Loew. Lesser Slave Lake, August 14-25, 1924.

Tipula barbata Doane. Edmonton, September 3-5, 1924.

Tipula penobscot Alex. Bilby, July 3, 1924.

Tipula entomophthorae Alex. (*similissima* Dietz). Bilby, June 8-July 14, 1924.

***Tipula variata* sp. n.**

General coloration light gray, the praescutum with four brown stripes; wings relatively long and narrow; distal section of R_2 atrophied; male hypopygium with the ninth tergite much as in *T. angulata* Loew, having a very weak median tooth at the base of the notch.

Male.—Length about 13 mm.; wing, 14.2 mm.

Female.—Length, 17-18 mm.; wing, 16 mm.

Allied to *T. subfasciata* Loew in the atrophied distal section of vein R_2 and the general nature of the wing-pattern, differing especially in the details of venation and the structure of the hypopygium.

Male with the basal three antennal segments obscure yellow; remaining segments weakly bicolorous, the basal enlargement being brownish black, the distal portion of the segments ranging through light brown on the basal segments through darker brown, the terminal segments uniformly blackened.

Mesonotal praescutum light gray with four brown stripes, the intermediate pair entire, narrowly separated by a line of the ground color; lateral stripes with grayish centers; scutellum and postnotum paler gray, with a vague capillary brown median line. Pleura light gray, the dorso-pleural membrane pale yellow. Legs with the femoral and tibial tips narrowly darkened; tarsi darker brown. Wings relatively long and narrow; the angulate white band beyond the cord variable in amount, in most specimens nearly attaining the wing-margin in cell M_3 . Venation: Distal section of R_2 atrophied, leaving only a weak basal spur.

Abdominal tergites obscure yellow with a conspicuous median black stripe that widens out behind to include most of the outer segments, these being margined caudally with yellowish and more broadly laterally with whitish gray; sternites obscure yellow, darker outwardly, the caudal margins of the segments yellowish; hypopygium dark. Male hypopygium with the ninth tergite relatively large, the caudal margin with a U-shaped median notch, as in *angulata*, the lateral lobes thus formed broadly truncated; a very weak median tooth at the base of the notch. Inner dististyle large, the tips conspicuously blackened.

The female is similar but the shorter antennae show little of the bicolorous condition of the male. Abdominal tergites more evidently trivittate with brown.

Holotype, ♂, Bilby, June 29, 1924 (*Owen Bryant*).

Allotopotype, ♀, June 29, 1924.

Paratopotypes, ♂ ♀, June 1-July 4, 1924.

Tipula angulata Loew, *T. huntsmaniana* Dietz and other similar species have the distal section of R_2 preserved.

***Tipula albertensis* sp. n.**

Male.—Length about 13-14 mm.; wing, 14-14.6 mm.

Female.—Length about 16 mm.; wing, 15 mm.

Closely related and similar to *T. angulata* Loew, differing as follows:

Antennal flagellum beyond the first segment uniformly dark brown, the segments only feebly incised. Praescutal stripes very indistinct, the intermediate pair widely separated from one another. Wings with the angulate post-stigmal fascia not quite reaching the posterior wing-margin. Distal section of R_2 entirely preserved, with a few macrotrichiae at extreme base. Male hypopygium with the caudal margin of the ninth tergite nearly transverse, the median portion with a small to very small circular emargination that bears a small triangular tooth at the base: tergite dark brown in color, the median portion pale.

Holotype, ♂, Bilby, July 12, 1924 (*Owen Bryant*).

Allotopotype, ♀, July 4, 1924.

Paratopotypes, 3 ♂ ♂, July 4, 1924.

Tipula latipennis Loew. Bilby, July 4-12, 1924.

Tipula ingrata Dietz. Bilby, July 4-12, 1924.

Tipula grata Loew. Bilby, July 3, 1924.

Tipula appendiculata Loew. Bilby, July 14, 1924. Dietz does not include this species in his treatment of the *hebes* group (*Trans. Amer. Ent. Soc.*, 40: 345-363; 1914) and it is almost certain that *T. derelicta* Dietz, described from Alaska, is a synonym.

***Tipula athabasca* sp. n.**

Belongs to the *hebes* group; general coloration of the thoracic dorsum gray, the pleura yellow; flagellum unicolorous; wings brownish yellow, unmarked except for the stigma; abdomen obscure yellow, the tergites with a median brownish black stripe.

Male.—Length, 11 mm.; wing, 12.5 mm.

Female.—Length, 16 mm.; wing, 12.8 mm.

Frontal prolongation of the head yellow, relatively short; palpi obscure yellow, the terminal segment blackened at base. Antennae of moderate length, in male, if bent backward, extending about to the base of the halteres; scapal segments yellow; flagellum brown to dark brown, in cases the first segment brownish yellow. Head brownish gray, the vertical tubercle and the occiput obscure yellow.

Pronotum obscure yellow, darker medially. Mesonotal praescutum yellowish gray in front, darker behind, with four darker brown stripes, the lateral pair margined internally with a darker brown line, the anterior end of which curves around the anterior end of the stripe to form a crook; scutum light gray, the lobes variegated with darker gray; scutellum dark gray medially, the sides and the parascutella yellow; postnotal mediotergite brown medially, yellowish

laterally. Pleura obscure yellowish, the dorso-pleural membrane clearer yellow. Halteres brown, the base of the stem and the apices of the knobs yellowish. Legs with the coxae brownish yellow; trochanters obscure yellow; femora brownish yellow, the tips narrowly dark brown; tibiae brown, the tips a little darker; tarsi dark brown, the terminal segments blackened. Wings with a strong brownish yellow tinge, the base and costal region brighter yellow; stigma yellowish brown; veins dark brown, the obliterative areas extensive. Venation: Sc_2 opposite mid-length of R_s ; distal section of R_1 pale but evident; distal section of R_2 entirely preserved, with macrotrichiae on the basal half; petiole of cell M_1 about one-fourth the cell, subequal to m ; $m-cu$ at the fork of M_{3+4} .

Abdominal tergites obscure yellow, with a distinct median brownish black to black stripe that is more or less interrupted, and less distinct, paler brown sublateral stripes; lateral margins of tergites broadly, the caudal margins more narrowly, buffy; sternites yellow; hypopygium brownish yellow, the tergite darker brown. Male hypopygium large and conspicuous. Ninth tergite tumid, the caudal margin gently emarginate, with a conspicuous median beak. Sternite and basistyle extensive, the apical appendage (lateral appendage of Dietz) produced into very extensive, thin, flattened plates, the free end terminating in acute pale points. Outer dististyle narrowed to the tip, strongly curved. Eighth sternite large, the caudal margin gently emarginate, the lateral portions with conspicuous brushes of long yellow setae. Ovipositor with the tergal valves long and straight, very slender, the margins smooth; sternal valves shorter, the tips obtuse.

Holotype, ♂, Bilby, July 14, 1924 (Owen Bryant).

Allotopotype, ♀, July 29, 1924.

Paratopotypes, 6 ♂ ♀, July 12-20, 1924.

This is the only Nearctic species of the *hebes* group in which the wings are immaculate except for the stigmal area.

T. macrolabis Loew. Bilby, July 3-20, 1924. Dr. Nathan Banks kindly informs me (February 1927) that there is but a single male type of *macrolabis* in the Loew Collection, this having been designated as the lectotype of the species. This specimen has the long arm of the basistyle smooth, without spines. This selection of the type-specimen of *macrolabis* makes *macrolaboides* Alex. (Can. Ent., 50:69; 1918) a synonym, leaving the species with spinous tips to the basistyles without a name. This latter is hereinafter discussed as *Tipula youngi*, sp. n. Both species have a great range in the Hudsonian and Canadian zones, the present species ranging from Alaska to Labrador, southward in the Rockies to New Mexico (at an altitude of 11000 feet.). *T. youngi* likewise has a very extensive range but is more confined to the northern and north-eastern portions of the continent.

T. youngi sp. n.

The distinctions between this species and *T. macrolabis* Loew have been given in detail in earlier papers (Crane-flies of New York, Part 1; Cornell Univ. Agr. Expt. Sta., Mem. 25:946-947, figs. 295, 296, 322, 323; 1919). The present species differs from *macrolabis* especially in the details of structure of the male hypopygium. The ninth tergite is rather squarely truncated across the caudal margin, with a sharp median tooth. Apex of the prolongation of the basistyle with two or three conspicuous spines.

Holotype, ♂, Bilby, July 2, 1924 (*Owen Bryant*).

Paratopotypes, 3 ♂♂, June 11-July 20, 1924.

Paratypes, ♂, Antioch, Illinois, June 13, 1920 (*Alexander*); Helderberg Mts., Albany Co., New York, July 3, 1915 (*Alexander*). ♂ Burks Falls, Ontario, July 12, 1926 (*F. P. Ide*); ♂, Severn, Ontario, July 4, 1926 (*C. H. Curran*).

The records of *Tipula macrolabis* for New York, New England and Ontario pertain to the present species.

This interesting crane-fly, one of the striking species in north-eastern North America, is named in honor of my friend, the late Mr. D. B. Young, Assistant Entomologist of New York for more than twenty years, to whom I am very greatly indebted for invaluable kindly advice and co-operation during my survey of the crane-flies of New York.

Tipula balioptera Loew. Bilby, June 28-July 12, 1924. This species and *centralis* Loew were formerly included in the *angustipennis* group of the genus (Crane-flies of New York, Part I, p. 941; 1919) but the discovery of the female sex requires their transfer to the *arctica* group, with serrated valves to the ovipositor.

T. hinei Alex. Edmonton, June 17, 1924; Bilby, June 1-14, 1924.

T. canadensis Loew. Bilby, June 19-July 12, 1924.

T. angustipennis Loew. Edmonton, May 10-13, 1924; Calgary, May 31, 1924; Bilby, May 29-June 1, 1924.

T. sarta Loew. Edmonton, May 10-June 5, 1924; Bilby, June 11-June 5, 1924.

T. senega Alex. Edmonton, May 10-June 22, 1924; Bilby, June 8-19, 1924.

T. fragilis Loew. Lesser Slave Lake, August 28, 1924. A pair taken and pinned in copula. I cannot separate these from eastern specimens of *fragilis*.

T. commiscibilis Doane. High River, July 15, 1921.

T. parvemarginata Alex. Calgary, May 30, 1924; Bilby, June 8-July 4, 1924; Lesser Slave Lake, August 17, 1924. This abundant material makes it very doubtful whether this species can be maintained as distinct from *T. kennicotti* Alex.

T. sulphurea Doane. Bilby, June 8-July 14, 1924.

T. pendulifera Alex. Lesser Slave Lake, August 14-17, 1924.

CYLINDROTOMINAE

Liogma nodicornis (O.S.). Bilby, June 19, 1924.

LIMONIINAE

Limonia triocellata (O.S.). Bilby, August 2, 1924; Lesser Slave Lake, August 17, 1924.

L. solitaria (O.S.). Bilby, June 26-August 5, 1924, the latter in the muskeg.

L. cinctipes (Say). Bilby, June 8-July 14, 1924.

L. dietziana, n.n. (for *Limonia gracilis* Dietz, described as a *Limnobia*, Can. Ent., 47: 329-330, fig. 27; 1915; nec *Limnobia gracilis* Wied., 1828). Edmonton, June 22, 1924; Bilby, June 18-26, 1924.

L. tristigma (O.S.), var. Lesser Slave Lake, August 17, 1924. Only the femoral tips are darkened and the specimens bear a marked resemblance to certain varieties of the Palearctic *L. tripunctata* (Fabr.).

Rhipidia (*Rhipidia*) *maculata* Meig. Edmonton, September 3-27, 1924, flying

in spots of sunlight under heavy woods in hollow; Lesser Slave Lake, August 17, 1924; Bilby, June 19, 1924.

R. (Monorhipidia) fidelis O.S. Bilby, June 19-July 12, 1924; sits with body against board and legs fully extended.

Discobola argus (Say). Lesser Slave Lake, August 27-28, 1924.

Dicranomyia immodesta O.S. Edmonton, October 6, 1924; Lesser Slave Lake, August 17, 1924; Grizzly Mt., Lesser Slave Lake, altitude 3000 feet, August 15, 1924.

D. rostrifera O.S. Lesser Slave Lake, August 17, 1924.

D. decora (Staeg.). Lesser Slave Lake, August 17, 1924; Grizzly Mt., altitude 3000 feet, August 15, 1924. *D. terrae-novae* Alex., described as a vicarious Nearctic representative of this species, should be placed in the synonymy of *decora*, which has a vast range throughout the subarctic portions of the Holarctic Region.

***Dicranomyia nycteris* sp. n.**

Male.—Length, about 4 mm.; wing, about 5 mm.

Very closely related to *D. morio* (Fabr.), of Europe, differing especially in the details of structure of the male hypopygium.

Terminal segment of antenna elongate, as in *D. caldonica* Edw., fully twice the length of the penultimate. Middle coxae black at base, the apical half yellow; posterior coxae yellow, the extreme base infuscated. Abdominal tergites black, the caudal margins of the intermediate segments paler, producing a weak bicolorous effect; intermediate sternites with the caudal margins conspicuously yellow, broadest on sternite three, narrowest on sternite five. Male hypopygium much as in *morio*, the lateral lobes of the tergite longer and more slender, narrowest just before the tips, the emargination of the tergite deep, transversely oval. Ventral dististyle bifid, as in *morio*, without the small rostral spine in the notch of the emargination. Gonapophyses long and slender.

Holotype, ♂. Bilby, June 8, 1924 (Owen Bryant).

This is the first record of occurrence in North America of any species closely allied to *D. morio*. *D. morioides* O. S. is a very different species.

***Dicranomyia rufiventris neomorio* subsp. n.**

Male.—Length, about 5.2 mm.; wing, 6 mm.

Rostrum and palpi black. Antennae black throughout, with long verticils. Head dark, sparsely pruinose.

Pronotum dark, pruinose. Mesonotal praescutum shiny black, the scutum and scutellum paler; postnotum dark, pruinose. Pleura dark, pruinose; a paler longitudinal area across the dorsal sterno-pleurite and ventral portion of the anepisternum. Halteres pale, the knobs infuscated. Legs with the coxae and trochanters yellow, the fore coxae somewhat darker; femora yellow; tibiae more obscure yellow; tarsi passing into dark brown. Wings with a strong brown tinge; stigma oval, pale brown, only a little darker than the ground-color; veins darker brown; obliterative areas conspicuous. Venation: Sc_1 ending shortly before the origin of R_s , Sc_2 far from its tip, Sc_1 alone being longer than $m-cu$; R_s angulated at origin; distal section of R_1 and basal section of R_2 both very faintly indicated; r better preserved than either of the latter, provided with macrotrichiae; cell

1st M_2 rather small, shorter than any of the veins beyond it; $m-cu$ before the fork of M , longer than the distal section of Cu_1 .

Abdominal tergites pale brown, the sternites yellowish; hypopygium pale. Male hypopygium with the dorsal dististyle a strongly curved sickle-shaped hook, narrowed gradually to the acute tip; ventral dististyle small, with the rostral prolongation large, its spine solitary, very long, terminating in a hair-like point. Ventral surface of aedeagus with a group of about six elongate setae, placed close together on the median line. Gonapophyses broad-based, the obtuse tips broadly blackened.

Holotype, ♂, Bilby, July 21, 1924 (*Owen Bryant*).

I cannot consider this as representing more than a slight geographical race of the European *D. rufiventris* Strobl (or at least of the material so determined by Lundstrom from Finland; it cannot be held as settled that Strobl's type, from Austria, is identical with the material so determined from northern Europe). In the present race, the dorsal dististyles are longer and the gonapophyses are blunter at their tips, but in all other characters the two flies are very close to one another. Like the last, no representative of this group of species had previously been recorded from North America.

Dicranomyia halterata O. S. Bilby, June 22-July 14, 1924.

***Dicranomyia athabasca* sp. n.**

Male.—Length, about 5.5 mm.; wing, 5.7 mm.

Closely allied to *D. sphagnicola* Alex., differing in the details of structure of the male hypopygium.

Rostrum obscure yellow; palpi with the terminal segments blackened. Antennae black throughout. Head brownish gray.

Pronotum dark brown medially, paler laterally. Mesonotal praescutum brown, with three darker brown stripes, the lateral margins and humeral region more yellowish. Pleura pale, the mesopleura darker, sparsely pruinose. Wings with cell 1st M_2 relatively large, rectangular.

Abdominal tergites brown, the sternites more yellowish. Male hypopygium very much as in *sphagnicola*. Ninth tergite apparently without the two small submedian groups of setae. Armature of the ventro-mesal face of the basistyle different, including an angularly bent blackened arm, the distal section of which is long and slender, with conspicuous setae at the angle; second lobe of basistyle not so conspicuously provided with golden-yellow setae as in *sphagnicola*. Dorsal dististyle and the rostral prolongation of the ventral dististyle longer and more slender. Gonapophyses of entirely different form, being large and conspicuous, the mesal apical region produced caudad into a long straight blade, the outer margin of which is conspicuously serrated.

Holotype, ♂, Bilby, June 26, 1924 (*Owen Bryant*).

D. haeretica O. S. Bilby, July 2-4, 1924.

***Dicranomyia intricata* sp. n.**

General coloration dark, gray pruinose; pleura pale, the sternopleurite and anepisternum darker; halteres relatively short, pale, the knobs dark brown; wings grayish subhyaline, the stigma small; $m-cu$ before the fork of M ; abdomen dark brown, the basal sternites yellow; male hypopygium unusually large and compli-

cated in structure.

Male.—Length, 7-7.2 mm.; wing, 7.5 mm.

Rostrum pale brown, sparsely pruinose; palpi black. Antennae black, the flagellar segments oval. Head dark gray.

Pronotum black, the posterior lateral angles obscure yellow. Mesonotum dull black, sparsely dusted with yellow pollen, more evidently so on the sides of the sclerite; remainder of mesonotum black, the median area of the scutum, scutellum and base of the postnotal mediotergite narrowly obscure yellow. Pleura yellow, the sternopleurite and anepisternum variegated with dark brown, in cases more extensively so, the surface pruinose. Halteres of moderate length only, the basal half of the stem yellow, the remainder dark. Legs with the fore coxae darkened, the remaining coxae and the trochanters yellow; femora dark brown, the bases yellowish, more narrowly on the fore legs; tibiae and tarsi dark brown. Wings grayish subhyaline; stigma small, oval, dark brown; veins dark brown, the oblitative areas distinct. Venation: Sc_1 ending opposite the origin of R_s , Sc_2 some distance from its tip, Sc_1 alone being much longer than the stigma and a little longer than $m-cu$; R_s about two-thirds longer than the basal section of R_{4+5} ; basal section of R_2 and distal section of R_1 pale; distal section of R_2 projecting as a small spur, provided with a few trichiae; cell 1st M_2 rectangular, longer than vein M_3 beyond it; $m-cu$ about one-third to one-fourth its length before the fork of M .

Abdominal tergites dark brown, the caudal margins of the segments narrowly pale; sternites yellow, the subterminal segments dark with pale margins; hypopygium dark, the base black. Male hypopygium very complicated by supernumerary outgrowths which involve the basistyle and ventral dististyle (Fig. 1). Ninth tergite relatively small, the caudal margin with a U-shaped notch, the broad lateral lobes with conspicuous setae. Basistyle (b) relatively large, with a large conspicuous prolongation (1) on ventral face at base, this directed caudad, the longest arm dilated and longitudinally ribbed before the apex; the broad basal portion of the prolongation terminates in two much smaller lobes, one dilated into a setiferous head, the other a small stout tubercle. Two other very conspicuous arms seem to arise from the membrane between the ventral dististyle and the basistyle but it cannot be decided to which of these they are more intimately attached; one of these (2) is the longest arm of the organ, directed caudad, appearing as a long slender rod, dilated at apex, the whole suggesting the tail of a lion, the enlarged apex being clothed with longer and more conspicuous setae on one face than on the opposite one; the second of these arms is much smaller, appearing as a sickle-shaped rod that terminates in a recurved crest of spinous setae. From this same general region arises a short, clavate fleshy lobe, the large head provided with very long conspicuous setae. Dorsal dististyle (d) a feebly curved rod, the tip suddenly narrowed into an acute spine. Ventral dististyle (v) large and fleshy, with two conspicuous outgrowths besides the usual rostral prolongation. The first of these (a) is about as large and of somewhat the same shape as the rostrum, narrowed at base, the surface with conspicuous spinous setae; the second outgrowth is a smaller stout lobe that terminates in two very elongate stout setae. The rostral prolongation itself (r) is a long pale yellow blade, dilated at

apex, at near midlength with the two usual spines, these subequal in length, placed at about one-half their length apart.

Holotype, ♂, Lesser Slave Lake, August 17, 1924 (Owen Bryant).

Paratopotype, ♂; *paratype*, ♂, Grizzly Mt., Lesser Slave Lake, altitude 3000 feet, August 15, 1924.

Dicranomyia intricata belongs to a group of the genus that now includes a number of Holarctic species, such as *complicata* de Meij., *stigmatica* (Meig.), *cramptoni* Alex., *melleicauda* Alex., *platyrostra*, sp. n., and others. The structure of the very complicated hypopygia of these species readily separates them.

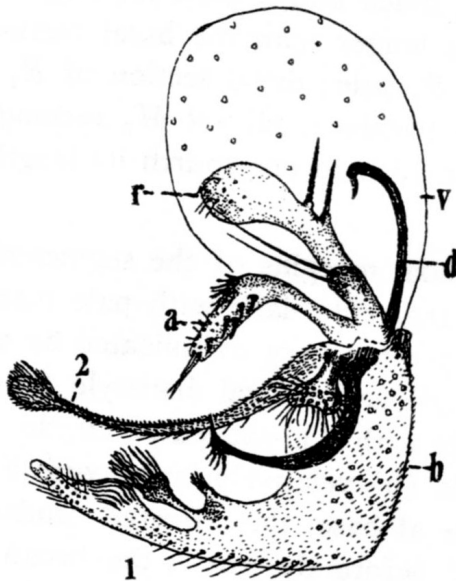


Fig. 1

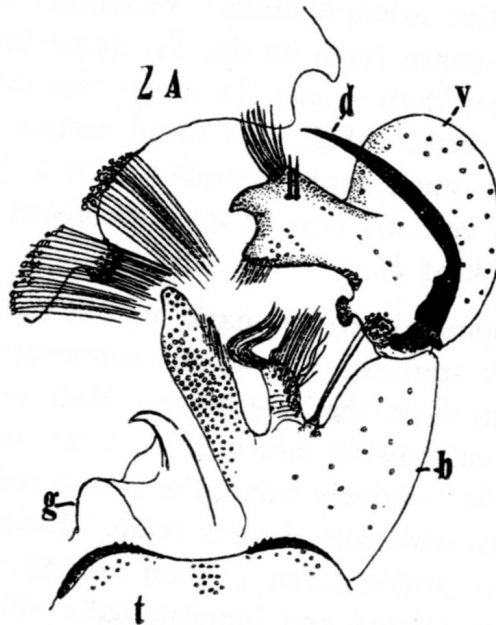


Fig. 2

Fig. 1. *Dicranomyia intricata*, sp. n.; male hypopygium. b=basistyle; l=ventral prolongation of same; 2=second appendage; d=dorsal dististyle; a=outgrowth; r=rostral prolongation; v=ventral dististyle.

Fig. 2. *Dicranomyia platyrostra*, sp. n.; male hypopygium. b=basistyle; d=dorsal dististyle; v=ventral dististyle; g=gonapophysis; t=ninth tergite; 2A=Enlargement of ventromesal portion of ventral dististyle.

Dicranomyia platyrostra sp. n.

General coloration dark, gray pruinose; wings with a pale brown tinge, the stigma dark brown; *Sc* short; male hypopygium very complicated in structure, especially the basistyle; rostral prolongation of the ventral dististyle unusually broad and flattened.

Male.—Length (without head) about 6.5 mm.; wing, 8 mm. Head broken.

General coloration of the thorax dark, pruinose, the coloration of the unique type discolored. Halteres yellow, the knobs dark brown. Legs with the fore coxae dark, the posterior coxae obscure yellow; trochanters yellow; remainder of legs brown. Wings with a brownish tinge; stigma dark brown, its outline irregular; veins dark brown. Venation: *Sc* short, *Sc*₁ ending opposite the origin of *Rs*, *Sc*₂ not far from its tip, *Sc*₁ alone being about one-half *m-cu*; *Rs* arcuated; cell 1st *M*₂ open by the atrophy of *m* in one wing of the type, closed in the other, probably normally closed; *m-cu* close to the fork of *M*.

Abdomen dark brown, the intermediate sternites brighter; hypopygium dark, the large ventral dististyle more yellowish. Male hypopygium (Fig. 2) with

the caudal margin of the ninth tergite (t) very gently emarginate, the lateral lobes darker, sparsely setiferous; a group of setae on the median region. Basistyle (b) of moderate size, the ventro-mesal lobe very long, the surface very densely setiferous, at its base with a smaller lobe that is provided with conspicuous setae which at the apex become modified into flattened, strongly curved, spinous setae; a very small tubercle, tipped with long conspicuous setae, placed at the base of this latter lobe. Ventral dististyle (v) relatively small, fleshy, the rostral prolongation very broad and flattened, shaped as in the figure, the rostral spines short, placed close together; mesal margin of dististyle (Fig. 2, A) basad of the prolongation with two dense brushes of very long conspicuous setae (omitted from Fig. 2, only the punctures shown, to avoid confusion), in addition to a short tubercle bearing a dense apical brush of setae. Dorsal dististyle (d) a gently curved flattened blade, strongly constricted shortly beyond the base, the tip acute.

Holotype, ♂, Lesser Slave Lake, August 17, 1924 (*Owen Bryant*).

Helius flavipes (Macq.). Bilby, June 22, 1924.

Tricyphona constans (Doane). Lesser Slave Lake, August 17, 1924.

Ula elegans O.S. Bilby, June 17-July 4, 1924.

Epiphragma fascipennis (Say). Bilby, June 22, 1924.

Pseudolimnophila noveboracensis (Alex.). Lesser Slave Lake, August 17, 1924.

Limnophila poetica O.S. Bilby, June 19-July 4, 1924.

***Limnophila bryanti* sp. n.**

General coloration obscure yellow; head with the anterior vertex dark, gray pruinose; wings with a pale yellowish tinge, the costal region a little darker; R_{2+3+4} about one-half longer than $m-cu$; inner end of cell R_3 pointed; abdomen without a distinct dark subterminal ring; male hypopygium with the outer dististyle pale, ending in a small spine and abundant microscopic denticles.

Male.—Length, about 9.5 mm.; wing, 10 mm.

Rostrum brownish yellow, the palpi black. Antennae elongate, in the unique type broken shortly beyond the base; scapal segments brownish yellow; basal two flagellar segments dark brown, the bases narrowly obscure yellow, the segments with conspicuous erect white setae; remainder of antennae broken. Head dark, the vertex heavily gray pruinose, the posterior vertex and occiput abruptly yellow.

Pronotum yellow, a little darker medially. Mesonotal praescutum obscure yellow, with three very ill-defined reddish brown stripes, the surface sparsely pruinose; humeral region more yellowish; pseudo-sutural foveae reddish brown, little evident against the ground-color; scutum pale, the surface sparsely pruinose; scutellum yellow; postnotal mediotergite light gray, more yellowish laterally. Pleura reddish yellow, very sparsely pruinose, the dorso-pleural region clearer yellow. Halteres pale, the knobs infuscated. Legs with the coxae and trochanters yellow; remainder of the legs broken. Wings with a pale yellowish tinge, the costal region a little darker; stigma poorly defined, brownish yellow; a small brown cloud at origin of R_s ; certain of the veins vaguely seamed with brown. Venation: Sc_1 ending just beyond the fork of R_s , Sc_2 at its tip; R_s long, angulated and weakly spurred at origin; R_{2+3+4} relatively long, one-half longer than $m-cu$; R_{2+3} about two-thirds R_3 alone; R_{1+2} very short, subequal or shorter

than R_2 alone; cell R_3 pointed at inner end; cell M_1 short; cell 1st M_2 long and narrow, *m-cu* at near mid-length.

Abdomen elongate, yellow, the tergites a little darker laterally; no black subterminal ring as in *poetica*; hypopygium pale. Male hypopygium with the outer dististyle gently curved, pale throughout, the apex with a small spine on outer apical angle and abundant microscopic denticles at the truncated apex of the style. Aedeagus small. Gonapophyses appearing as flattened, elongate-triangular blades, the apex acute, the outer margin with about five or six large appressed teeth.

Holotype, ♂, Bilby, June 25, 1924 (*Owen Bryant*).

I name this interesting fly after the collector, Mr. Owen Bryant, who has added most materially to our knowledge of the Oriental and Nearctic Tipulidae. *Limnophila bryanti* bears a great superficial resemblance to *L. poetica* O.S., with which species it was associated in the collection. The structure of the male hypopygium is very distinct.

Limnophila harperi Alex. Bilby, June 17, 1924. The species was described (*Insec. Inscit. Menst.*, 14:23-24; 1926) from the Athabasca Delta, Alberta, the type collected June 18, 1920, by Dr. Francis Harper. The species is very distinct from the other members of the *unica* group in the structure of the male hypopygium.

Limnophila (Phylidorea) platyphallus Alex. Bilby, June 24, 1924.

Neolimnophila ultima (O.S.). Edmonton, September 5-27, 1924; Lesser Slave Lake, August 17, 1924.

Helobia hybrida Meig. Edmonton, April 30, 1925; Bilby, August 2, 1924; Tofield, October 24, 1924; Lesser Slave Lake, August 17, 1924.

Molophilus soror Alex. A female, Lesser Slave Lake, August 17, 1924.

Erioptera (Erioptera) villosa O.S. Bilby, July 3-12, 1924.

Ormosia arcuata (Doane). Lesser Slave Lake, August 14, 1924.

A NEW HEMIMENE FROM ALBERTA (EUCOSMIDAE, LEPID.).*

BY J. MCDUNNOUGH,
Ottawa, Ont.

Hemimene bowmanana n. sp.

Head and palpi dark brown sprinkled with gray. Primaries deep brown, somewhat paler in apical region where there is scattered ochreous scaling; two rather obscure whitish vertical streaks about the middle of the inner margin which in the middle of the wing connect with still more obscure oblique streaks from middle of costa which show a slight purplish metallic color; ocelloid region bordered by two broad metallic bars, more or less united above tornus; the contained area is slightly sprinkled with pale ochreous but contains no definite dark streaks; apical area of costa with four short geminate white streaks, the first pair connecting with the inner ocelloid bar by a metallic streak, the middle pairs more or less joined basally by metallic scaling, and the outer pair giving rise to a metallic line which curves to outer margin and ends in a white dot; similar white dots occur at the outer ends of the ocelloid bars; fringes with a dark basal line, followed by

*—Contribution from the Division of Systematic Entomology, Entomological Branch, Dept. of Agric., Ottawa.