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THE CRANE-FLIES (TIPULIDAE) OF NEW ENGLAND: SECOND SUPPLEMENTARY LIST.

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Mr. Johnson's "Diptera of New England" (Occas. Papers Boston Soc. Nat. Hist., vol. 7, no. 15, p. 1–326, 1925) furnished the basic list of Tipulidae for the New England States with 264 species. My first supplement (Occas. Papers Boston Soc. Nat. Hist., vol. 5, p. 169–174, 1925) added 13 species to this list. As a result of further detailed collecting during 1926, it is now possible to add 13 more species to this list, bringing the known total to 290. In the present paper I wish to discuss these additions; to briefly outline the late summer Tipulidae of Mount Desert (New England Area 8); and to describe the two novelties that are discussed in the list of additions.

Additions to the Tipulidae of New England.

278. **Dicranomyia lacroixi** Alex. (Ent. News, vol. 37, p. 46, 1926).

Rochester, Plymouth Co., Mass., on cranberry bog, July 9, 1924 (*D. S. Lacroix*).

279. **D. cramptoni** Alex. (Ent. News, vol. 37, p. 47, 1926).

Fish hatchery, near Sunderland, Franklin Co., Mass., altitude 200 feet, October 15–16, 1924 (*G. C. Crampton and C. P. Alexander*).

280. **D. spinifera,** sp. nov.

Abundant specimens from New York and New England, as indicated under the type description (p. 229). This species had been confused with *D. halterata* O. S., but a study of the types of the latter shows the present species to be very distinct.

The only authentic specimens of *halterata* from New England seem to be those I recorded in the first supplementary list (Lake May, Mass., June 12–30, 1925).

281. **Limonia macateei** (Alex.) (Can. Ent., vol. 48, p. 42, 1916).

One female, Charlemont, Franklin Co., Mass., August 12, 1925. I follow Mr. Edwards, the late Dr. Bergroth, and others, in placing in *Limonia* those species of the genus *Dicranomyia* with the long subcostal vein.

282. **Dicranoptycha septemtrionis** Alex. (Psyche, vol. 33, p. 56, 1926).

Greenfield Mt., Franklin Co., Mass., August 23–September 6, 1925. One additional specimen was taken on the Holyoke Range, south of Amherst, Mass., October 3, 1926, where it was associated with a characteristic autumnal tipulid fauna: *Dicranomyia immodesta* O. S., *Dicranomyia spinifera*, sp. nov., *Limonia indigena* (O. S.), *Rhipidia maculata* Meig., *Discobola argus* (Say), *Ormosia deviata* Dietz, *O. nigripila* (O. S.), *Cladura flavoferruginea* O. S., *Tipula unifasciata* (Lw.) (the commonest species, especially the females, which were noted ovipositing in the thick leaf mold along the trail), *T. unimaculata* (Lw.), *T. algonquin* Alex., *T. fragilis* Lw., and *T. ultima* Alex. All of the above frequented the high, relatively dry mountain ridge, with no streams and but little water.

283. **Limnophila** (**Ephelia**) **solstitialis** Alex. (Bull. Brooklyn Ent. Soc., vol. 21, p. 109, 1926).

The New England records in Johnson's List have been indicated in the original description. The fly occurred in small numbers at Orient Springs, near Amherst, Mass., July 17, 1926, and on the following day on the slopes of Mt. Toby, Franklin Co., Mass.

284. **Limnophila** (**Phylidorea**) **auripennis** Alex. (Bull. Brooklyn Ent. Soc., vol. 21, p. 113, 1926).

A paratype was from Mt. Kineo, Maine, August 17, 1913 (*C. P. Alexander*). Other New England specimens are in the Boston Society Collection.

285. **L.** (**P.**) **fratria** O. S.

Bar Harbor, Mount Desert, Maine, June 3, 1919 (*C. W. Johnson*).

286. **L.** (**P.**) **platyphallus** Alex. (Bull. Brooklyn Ent. Soc., vol. 21, p. 111, 1926).

Lake May, Berkshire Co., Mass., in sphagnum bog, altitude 1500 feet, July 1, 1925 (*C. P. Alexander*); holotype. Orono, Penobscot Co., Maine, June 6, 1913 (*C. P. Alexander*); paratype.

287. **Ormosia megacera** Alex. (Can. Ent., vol. 49, p. 26, 1917).

Canada Brook, Echo Lake, Mount Desert, September 1, 1926 (*C. P. Alexander*). The conditions under which this fly was taken are discussed in the second part of this paper.

288. **Erioptera** (**Erioptera**) **furcifer** Alex. (Bull. Brooklyn Ent. Soc., vol. 14. p. 108, 1919).

Amherst, Mass., July 26, 1926 (*Kenneth Salman*). Two other species of the *chlorophylla* group (*chlorophylloides* Alex. and *subchlorophylla* Alex.) may be expected in New England, though not yet recorded.

289. **Tipula concava** Alex. (Ent. News, vol. 37, p. 294, 1926).

Paratype, ♂, Winnipauk, Conn., June 16, 1909 (*C. W. Johnson*).

290. **T. tennessa** Alex. (Can. Ent., vol. 52, p. 226, 1920).

Cohasset, Mass., October 20 (*Owen Bryant*); Faneuil, Mass., 1904 (*A. P. Morse*).

(58). **Molophilus soror,** sp. nov.

This species was erroneously determined by myself (Cornell Univ., Agr. Exper. Sta., Mem. 25, p. 906, 1919) as being *M. comatus* (Doane), and was so recorded by Mr. Johnson in his New England list. The species is discussed on p. 231 of the present paper.

MOUNT DESERT, MAINE, AUGUST 26–SEPTEMBER 12, 1926.

Through the great kindness of Dr. and Mrs. H. T. Fernald, Mrs. Alexander and I were able to spend three weeks at the Fernald home, near Southwest Harbor. The collections of craneflies made on the western half of Mount Desert during this period are very rich and representative of the late summer and early autumnal fauna of the island. Approximately a score of species were added to the island list.

Collections were made in favorable situations at and near Southwest Harbor, and on all of the mountains west of Somes Sound. Special attention was devoted to the arborvitae swamps which are so characteristic of the low-lying portions of the island. The extensive swamp along Canada Brook, the southern inlet of Echo Lake, may be briefly discussed as being typical of numerous

similar areas throughout the region. The dominant tree is arborvitae, with much balsam, yew, red maple, and yellow and white birches at slightly higher levels. Among the shrubs, alder is dominant. The hollows are densely carpeted with sphagnum, and the stream flowing through the swamp is partly choked in places with *Chrysosplenium*. On the slightly elevated hummocks occur the numerous remnants of characteristic spring flowers, notably twinflower, goldthread, star flower, bunchberry, and sarsaparilla. The crane-flies were swept in great numbers from the rank growth of yew, balsam, and herbage. Species in the accompanying list that were taken in the above swamp are indicated by "Swamp."

In places there are very old bogs, where a dense growth of larch, balsam, and spruce forms the bulk of the vegetation. There is much sphagnum in the hollows. Species from situations such as this are indicated by the word "Bog."

Along the Beech Hill Road, on the eastern foot of Beech Mountain, is a broad rocky gorge that produced certain crane-flies that were not found elsewhere. The forest cover of the gorge is almost entirely yellow birch, with smaller balsams and much yew. A small stream flows through the gorge, and most of the crane-flies taken were swept from the vegetation along this stream or from the rocky cliffs nearby. Species from this locality are indicated by the word "Gorge."

A small swale lying between Norwood Cove and the village center of Southwest Harbor yielded a few species that were found nowhere else. A small sluggish stream flows through the swampy area, with a few alders and dense growths of *Impatiens biflora, Polygonum sagittatum, Scirpus* sp., *Carex* sp., etc. Species from this situation are indicated by the word "Swale."

Rhipidia (*Rhipidia*) *maculata* Meig. Generally distributed along the trails, in swamps and bogs, and on the slopes of Western Mountain to 970 feet, August 26–September 8.

Discobola argus (Say). Very common and widely distributed throughout the coniferous belt, ascending to the wooded summit of Western Mountain, August 26–September 12.

Geranomyia (*Geranomyia*) *canadensis* (Westw.). One, shores of Echo Lake, September 4.

Dicranomyia immodesta O. S. Common in the swamps and in wet places along the trails, September 1–8.

D. stulta O. S. Along a small stream near Fernald Cove, August 26 (*M. M. Alexander*); Gorge, September 12. Two specimens only, very much darker in color than the summer specimens, the mesonotal praescutum being almost uniformly shiny black. At first I thought these represented an undescribed species, but from the hypopygial characters they must be referred to *stulta*.

D. profunda Alex. A fully colored individual at Echo Lake, August 29; teneral specimens at Long Pond, September 8. The uncolored specimens are light green, with the femoral tips only slightly darkened. The species is characteristic of higher and drier situations than are some of the allied forms.

D. spinifera, sp. nov. Not uncommon in the swamps and along wet places, August 31–September 8; Gorge, September 10–12.

Limonia globithorax (O. S.). Swamp, September 1.

L. parietina (O. S.). Gorge, September 10.

L. immatura (O. S.). One ♂, flew from a cranny of the cliffs in the gorge, September 12. It is very small, but I cannot find any other tangible differences between it and *immatura*. It is very possible, moreover, that *immatura* is not specifically distinct from *cinctipes* (Say).

L. solitaria (O. S.). Swamp, September 1.

L triocellata (O. S.). Swamp, September 1.

L. tristigma (O. S.). Swamp, September 1–10, common.

L. indigena (O. S.). Along trails, September 1.

Ula paupera O. S. Evergreen woods, September 11.

Pseudolimnophila contempta (O. S.). Swamp, August 29.

P. noveboracensis (Alex.). Common in swamps, September 1–4.

Limnophila brevifurca O. S. Swamp, 1 ♀ only, September 4.

L. lenta O. S. Swamp, August 26–September 11; Gorge, September 10–12.

L. (*Ephelia*) *solstitialis* Alex. Swamp, September 1.

L. (*Dicranophragma*) *fuscovaria* O. S. Swamp, August 29–September 1; very small but apparently conspecific.

L. (*Prionolabis*) *munda* O. S. Gorge, September 10–12.

Adelphomyia americana Alex. Swamp, September 1–10; Swale, September 11; Gorge, September 12.

A. cayuga Alex. Swale, August 30–September 11.

Pedicia albivitta Walk. Trail, August 30; Swamp, September 1.

Tricyphona inconstans (O. S.). Swamp, August 29–September 10.

T. autumnalis Alex. Swamps, very common, August 29–September 10.

Amalopina flaveola (O. S.). Very common in the swamps and bogs, August 26–September 10.

Rhaphidolabis (*Rhaphidolabis*) *tenuipes* O. S. Swamp, August 26–September 10.

R. (*R.*) *rubescens* Alex. Swamps, September 8–10; Gorge, September 10–12.

R. (*R.*) *cayuga* Alex. Swale, August 30–September 11.

Cladura (*Neocladura*) *delicatula* Alex. The commonest species in the gorge, September 10–12.

Gonomyia (*Gonomyia*) *bidentata* Alex. One of the commonest and most characteristic species in the swamps, August 29–September 10; Bogs; Gorge, September 10–12.

Erioptera (*Empeda*) *stigmatica* (O. S.). Swamp, August 29.

Molophilus pubipennis (O. S.). Swamps, August 26–September 10; Swale, September 11. Some of the males are unusually dark in color.

M. soror, sp. nov. The occurrence of this species is discussed under the specific diagnosis (p. 231); Swale, September 11.

Ormosia nubila (O. S.). Lake shores, September 4; on Western Mountain to 600 feet, September 8.

O. luteola Dietz. Swamps, September 1–4; Bogs, August 28–September 8.

O. pygmaea (Alex.). Bogs, September 4–10; Swamp, September 1.

O. deviata Dietz. Swamp, September 1; Bogs, September 4; Swale, September 11.

O. rubella (O. S.). Swamp, August 29–September 10; margins of bogs and along trails, September 4–10.

O. nimbipennis Alex. The commonest *Ormosia* on the island at this season, occurring in swamps, bogs, and along trails, August 25–September 12; found in small dancing swarms beneath the evergreens; ascends Western Mountain to 600 feet.

O. monticola (O. S.). Swamps and bogs, August 26–September 10.

O. megacera Alex. Swamp, one ♂, September 1.

Oropeza sp. One ♀ not specifically determined; trail, August 31.

Nephrotoma brevioricornis (Doane). One ♂, in bog, September 5.

Tipula umbrosa Lw. Common in the swamps and along wet places near trails, August 28–September 10.

T. mainensis Alex. On higher land, along trails and on lower slopes of mountains, August 28–September 10.

T. fragilis Lw. One small ♂ of what appears to be this species; Western Mountain, on wet cliffs, 850 feet, September 8.

T. hermannia Alex. Along trails, August 27–September 8; among the boulders in Valley Cove at low tide, September 3; in spider's web, Swamp, September 1.

T. trivittata Say. Females only, Gorge, September 12.

T. ultima Alex. In numbers along the trails, the first of the season on September 8, very common on the 12th.

T. (*Cinctotipula*) *algonquin* Alex. Common and very characteristic of the lower slopes of the mountains, flying about among the *Juniperus;* Flying Mountain, August 27; Western Mountain up to 700 feet, September 8.

Besides the Tipulidae mentioned, *Bittacomorpha clavipes* (Fabr.) and *Ptychoptera rufocincta* O. S. (Ptychopteridae) occurred in the swamps, September 1–4.

Descriptions of New Species.

Dicranomyia spinifera, sp. nov.

Allied to *D. halterata* O. S.; head gray; mesonotal praescutum brownish yellow with three confluent dark brown stripes, the surface sparsely pruinose; pleura pruinose, the sternopleurite darkened; halteres and abdomen elongate; wings with Sc_1 longer than *m-cu;* caudal margin of the ninth tergite of the male hypopygium with a deep V-shaped notch; a single spine on rostrum of ventral dististyle; anal tube with a conspicuous group of seven or eight spinous setae.

Male.—Length 7.5–8 mm.; wing 7.8–8 mm.

Female.—Length 8.5 mm.; wing 8.5 mm.

Rostrum and palpi brownish black, the former pruinose. Antennae black throughout; flagellar segments oval, the verticils slightly longer than the segments. Head light gray.

Pronotum dark brown, gray pruinose. Mesonotal praescutum brownish yellow with three confluent darker brown stripes, the scutal lobes similarly colored; median area of scutum and the scutellum paler; postnotum pruinose. Pleura pale, sparsely pruinose, the postnotal pleurotergite and the anterior sternopleurite dark brown, pruinose. Halteres elongate, pale, the knobs dark brown. Legs with the coxae yellow, very sparsely pruinose; trochanters pale; femora brownish yellow, darkening outwardly; tibiae and tarsi gradually passing into dark brown. Wings with a pale brown tinge, the stigma a trifle darker; veins dark brown. Venation: Sc_1 ending opposite the origin of *Rs*, Sc_2

removed from the tip of Sc_1, the latter longer than *m-cu; Rs* in alignment with R_{2+3}, about one-half longer than the basal deflection of R_{4+5}; cell *1st* M_2 relatively small; *m-cu* variable in position, usually before the fork of *M*.

Abdominal tergites dark brown, the sternites more yellowish, especially the basal segments; hypopygium reddish brown. Male hypopygium with the caudal margin of the ninth tergite with a deep V-shaped notch, the lateral lobes conical, darkened, setiferous. Basistyle with the ventro-mesal lobe large, appressed to the mesal face. Ventral dististyle relatively small, the rostrum stout, bearing a single spine. Dorsal dististyle slender, strongly curved, the tip acute. Mesal lobe of each gonapophysis slender, gently curved, the tip blackened. Anal tube with a conspicuous group of about seven or eight strong spinous setae.

Range.—Northeastern North America.

Holotype, male, Whately Glen, Franklin Co., Mass., altitude 250 feet, October 4, 1925 (*Alexander*). *Allotype*, female, Mt. Toby, Mass. September 15, 1925 (*Alexander*). *Paratopotypes*, numerous alcoholic specimens (*Crampton*); *paratypes*, Orient Springs, Hampshire Co., Mass., altitude 375 feet, September 18, 1925; Holyoke Range, Hampshire Co., Mass., altitude 700 feet, October 3, 1926; Halifax Gorge, Vermont, September 6, 1925; Mount Desert, Maine, August 31–September 8, 1926; Gloversville, New York, altitude 900 feet, August 31–September 1, 1925 (*Alexander*).

Dicranomyia spinifera has been confused in collections with *D. halterata* O. S., and it is probable that all late summer and autumnal records for the latter in northeastern North America really pertain to the present species. The fly is very common in shaded places and may be swept in numbers from the ferns and other rank herbage late in the season.

Molophilus soror, sp. nov.

General coloration brownish gray; wings whitish, the costal margin conspicuously yellowish; a brown seam along vein Cu_1 and a cloud on *m-cu* and the basal section of M_{3+4}.

Female.—Length 4–5 mm.; wing 5–6 mm.

Rostrum dark gray, the palpi black. Antennae short, brownish black, the first segment pruinose; basal flagellar segments subcylindrical, passing into elongate oval, the outer segments smaller. Head yellowish gray.

Pronotum dark. Lateral pretergites narrowly whitish. Mesonotal praescutum brownish gray, paler laterally; humeral triangles usually a little brightened; interspaces between the three usual stripes appearing as narrow darker brown vittae; pseudosutural foveae elongate, transverse, black; scutum grayish brown, the centers of the lobes somewhat darker; scutellum obscure fulvous; postnotum grayish brown. Pleura dark gray. Halteres pale. Legs with the coxae dark, pruinose, especially the fore coxae, the posterior coxae more reddish brown; trochanters reddish brown; femora brownish yellow, the tips narrowly darker brown; tibiae pale brown, the tips narrowly infuscated; tarsi dark brown. Wings whitish, the costal margin and wing-base strongly yellowish; a brown seam along vein Cu_1; a brown cloud on *m-cu* and the basal section of M_{3+4}

veins dark brown, *C*, *Sc*, and *R* yellowish; macrotrichiae of veins dark brown. Venation: Sc_1 ending just beyond *r*; Sc_2 far from the tip of Sc_1 and only a short distance beyond the origin of *Rs*; inner end of cell R_3 lying proximad of cells R_4 and R_5; vein *2nd A* relatively long, the outer third gently sinuous, deflected toward vein *1st A* so that cell *1st A* is narrowed shortly before its outer end.

Abdominal tergites dark brown, with a relatively sparse vestiture of yellow setae; sternites more grayish brown, the extreme caudal margins of the individual segments narrowly pale. Ovipositor with the valves horn-colored, the tergal valves gently upcurved.

Range.—Maine.

Holotype, female, Southwest Harbor, Mount Desert, September 11, 1926 (*Alexander*). *Paratopotypes*, 50 females; *paratypes*, 4 females, Houlton, Aroostook Co., August 24, 1913 (*Alexander*).

This very interesting species was taken in large numbers in a small swale (described on p. 226) near Southwest Harbor. I at once recognized the fly as being identical with a species I had taken in northern Maine in 1913 and which had earlier (Cornell Univ., Agr. Exper. Sta., Mem. 25, p. 781, 906–907, 967, 1919) been tentatively identified as being *Molophilus comatus* (Doane). In 1913 only a few specimens were secured and these all proved to be females. With this knowledge available, a special and very detailed effort was made to locate the male sex, but despite these efforts all of the more than one hundred specimens seen proved once more to be females. The very great abundance of the species over a restricted area renders it improbable that the males had appeared earlier and that their flight period was over. Working on the possibility that there might be here a case of subapterism in the male sex, I made a critical search on the moist earth of the swale but without results. The condition of fully winged females and subapterous males is very rare in the Diptera, as, indeed, throughout the insect world. There remains the possibility that the species is parthenogenetic, but such a condition could not be proven without breeding the species.

All records for *Molophilus comatus* (Doane) from New England should be deleted and the present species added in its place. The fly is readily told from all other eastern species of the genus by the spotted wings.

The holotypes of the two new species described at this time are in my collection, and paratypes are in the collection of the Boston Society of Natural History.

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