

Occasional Papers
OF THE
Boston Society of Natural History.

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

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THE basic list of the crane-flies, Tipulidae, of New England is that provided by Mr. Charles W. Johnson in his monumental 'Diptera of New England.'¹ This work recorded 264 species of Tipulidae as having been found in the area in question. In three supplementary lists by the present writer² a considerable number of additional species were reported, to 1930 bringing the list to 318 species. Since that date, still further collecting has resulted in adding 28 species to the list, these being recorded at this time, bringing the nominal total to 346. However, it should be noted here that among the species given by Mr. Johnson in his basic list, there are included a few that were founded on erroneous records and such names should be deleted from the total. Such species include *Tipula appendiculata* Loew, *T. frigida* Walker, *T. ignota* Alexander (*discolor* Loew, preoccupied), *T. simulata* Walker (*trivittata* Say) and *T. suspecta* Loew (*fragilis* Loew). It may be noted that virtually all such names are based on materials that were collected in the White Mountains, New Hampshire, by Mrs. Annie T. Slosson and determined by Coquillett without comparison with the type material of the various forms. It should be observed further that the record of *Tipula macrolabis* Loew (Johnson, *l.c.*, p. 38, as *macrolabris*) in reality pertains to *T. youngi* Alexander.

The plan of the present report is about the same as followed in

¹Occas. Papers Boston Soc. Nat. Hist. 7, no. 15: 1-326, 1925.

²*Ibid.*, 5: 169-174, 1925.

'' 5: 223-231, 1927.

'' 5: 267-278, 1930.

the previous supplements, that is, the recording of the additional forms, a discussion of the crane-fly fauna of a part of the White Mountains, New Hampshire, and the description of two novelties discovered in conjunction with the survey.

ADDITIONS TO THE TIPULIDAE OF NEW ENGLAND.

319. **Prionocera sordida** (Loew). Berlin. Ent. Zeitschr. 7: 298, 1863.

Massachusetts: Mattapan, Suffolk Co., May 1, 1929 (*B. I. Gerry*).

320. **Tipula (Yamatotipula) subeluta** Johnson. Bull. Amer. Mus. Nat. Hist. 32: 42-43, 1913.

Massachusetts: Nantucket Island, Polpis, August 6; Taupaushaw, August 7, September 9, 1929 (*C. W. Johnson*). (*Johnson*, Pub. Nantucket Maria Mitchell Assoc. 3, no. 2: 121, 1920.)

321. **Tipula (Schummelia) idei** Alexander. Can. Ent. 60: 55, 1928.

New Hampshire: White Mountains, Tuckerman Trail, altitude 2,700 feet, July 4, 1933 (*W. H. Harrison*); 2,800 feet, July 7, 1933 (*C. P. Alexander*). (*Can. Ent.* 66: 116-118, 1934.)

322. **Tipula (Oreomyza) illinoiensis** Alexander (*versicolor* Loew, preoccupied). Insec. Inscit. Menst. 3: 128, 1915.

New Hampshire: Bretton Woods, June 24, 1913 (*C. W. Johnson*). A rather weak species, closest to *senega* Alexander, but apparently distinct.

323. **Tipula (Oreomyza) nebulipennis** Alexander. Can. Ent. 51: 170-171, 1919.

New Hampshire: White Mountains, Carriage Road, altitude 4,700 feet, July 8, 1933 (*M. M. Alexander*); Lakes of Clouds Hut, altitude 5,000 feet, July 8, 1933 (*C. P. Alexander*). (*Can. Ent.* 66: 116-118, 1934.)

324. **Tipula (Oreomyza) ternaria** Loew. Berlin. Ent. Zeitschr. 8: 57, 1864.

New Hampshire: Franconia, White Mountains, May 7, 1935 (*P. Clark, G. C. Crampton*).

325. *Nephrotoma opacivittata* (Dietz). Trans. Amer. Ent. Soc. **44**: 123, 1918.
Massachusetts: Chesterfield Gorge, August 3, 1928 (*C. P. Alexander*).
326. *Dolichopeza (Oropeza) tridenticulata* Alexander. Bull. Brooklyn Ent. Soc. **26**: 177-178, 1931.
Massachusetts: Goshen, Hampshire Co., July 1, 1931 (*G. C. Crampton*).
327. *Dolichopeza (Oropeza) walleyi* (Alexander). Can. Ent. **63**: 139-140, 1931.
Massachusetts: Amherst, May 27, 1933 (*H. C. Potter*).
328. *Limonia (Discobola) nigroclavata* Alexander. Diptera of Connecticut (*in press*).
Massachusetts: Holliston, Middlesex Co., September 16, 1929 (*B. I. Gerry*).
329. *Dicranota (Plectromyia) petiolata* (Alexander). Can. Ent. **51**: 194-195, 1919.
New Hampshire: headwall of Tuckerman Ravine, Mount Washington, White Mountains, altitude 5,000 feet, August 24, 1932 (*C. P. Alexander*). (Can. Ent. **66**: 116-118, 1934.)
330. *Phyllolabis lagganensis* Alexander. Bull. Brooklyn Ent. Soc. **26**: 183-184, 1931.
Described from Laggan, Alberta.
New Hampshire: Valleyway Trail, along Snyder Brook, Mount Madison, White Mountains, altitude 4,200 feet, August 26, 1935 (*C. P. Alexander*).

A most interesting discovery, adding the genus *Phyllolabis* to the fauna of eastern North America. Hitherto the known species in the Nearctic region had been restricted to the western United States and Canada, the most easterly known record being the Rocky Mountain National Park, Colorado. Osten Sacken¹ had

¹The genus *Phyllolabis* O.S. (Dipt., Tipul.); a remarkable case of disconnected areas in geographical distribution. Berlin Ent. Zeitschr. **41**: 374-376, 1897.

earlier discussed the broken distribution of the genus, at that date being known only from a single species in northern Europe and two others in the western United States.

It should be noted that the costal dilation of the wing, as discussed for the male sex at the time of the original characterization of the species, is found in both sexes (fig. 3). The present specimens were taken by sweeping the low balsam firs along the trail. Great moss-covered cliffs and boulders are in this vicinity but the specimens did not frequent the wet rock faces, as is often the case in this genus.

331. *Dactylolabis pemetica*, sp.nov. (figs. 1, 2).

Maine: Cañon Brook, between Dike and Cadillac Mountains, Mount Desert Island, altitude 500-600 feet, June 23, 1935 (*A. E. Brower, W. H. Harrison, C. P. & M. M. Alexander*).

New Hampshire: headwall of Huntington Ravine, Mount Washington, altitude 4,600 feet, August 15, 1935 (*C. P. Alexander*).

332. *Dactylolabis hudsonica* Alexander. Bull. Brooklyn Ent. Soc. 26: 181-182, 1931.

Maine: Mount Desert Island, Duck Brook, June 18, 1935 (*C. P. Alexander, W. H. Harrison and William Procter*). Cañon Brook, Dike Mountain, altitude 500-600 feet, June 23, 1935 (*C. P. Alexander, A. E. Brower and W. H. Harrison*).

Massachusetts: Mount Toby, Franklin Co., May 15-25, 1934 (*C. P. Alexander and A. B. Gurney*).

333. *Limnophila (Idiolimnophila) emmelina* Alexander. Proc. Acad. Nat. Sci. Philadelphia for 1914: 597, 1914.

Massachusetts: Central Vermont siding, along Roaring Brook, Mount Toby, Franklin Co., May 27, 1934 (*A. B. Gurney*).

334. *Limnophila (Phylidorea) caudifera* Alexander. Bull. Brooklyn Ent. Soc. 22: 111, 1927.

Vermont: Woodcrest Farm, near Stowe, altitude 1,000 feet, June 17-18, 1927 (*C. P. Alexander*). For a more detailed account of this habitat see *Occas. Papers Boston Soc. Nat. Hist.* 5: 270-276, 1930.

335. *Pilaria harrisoni*, sp.nov.

New Hampshire: along the Webster Scout Trail, Osgood Ridge, Mount Madison, White Mountains, altitude 2,000 feet, August 23, 1935 (*C. P. Alexander and W. H. Harrison*).

336. *Hexatoma (Eriocera) cinerea* (Alexander). *Psyche* 19: 169-170, 1912.

Maine: Mount Desert Island, head of Somes Sound, east of Patty Lot Hill, sea level, June 23, 1935 (*C. P. Alexander, W. H. Harrison and William Procter*).

Massachusetts: vicinity of Boston (type locality).

337. *Chionea primitiva* Alexander. *Can. Ent.* 49: 204, 1917.

Massachusetts: Amherst, November 13, 1933 (*A. B. Gurney*).

338. *Rhabdomastix (Sacandaga) brittoni* Alexander. *Jour. N. Y. Ent. Soc.* 41: 93, 1933.

Connecticut: Kent Falls, July 23-24, 1931 (*C. P. Alexander*) (type locality).

339. *Erioptera (Erioptera) chlorophylloides* Alexander. *Bull. Brooklyn Ent. Soc.* 14: 106-107, 1919.

Connecticut: Manitic Lake, Hartford Co., August 6, 1929 (*C. P. Alexander*). Stafford Springs, Tolland Co., June 14, 1933 (*C. P. Alexander*). Natchaug State Forest, June 14, 1933 (*C. P. Alexander*). Putnam, Windham Co., June 15, 1933 (*C. P. Alexander*).

340. *Erioptera (Erioptera) chrysocomoides* Alexander. *Jour. N. Y. Ent. Soc.* 37: 50-51, 1929.

Massachusetts: near Central Vermont tracks, east of Amherst, July 27, 1926 (*C. P. Alexander*).

341. *Erioptera (Erioptera) subchlorophylla* Alexander. *Bull. Brooklyn Ent. Soc.* 14: 107-108, 1919.

Massachusetts: Orleans, Cape Cod, August 22, 1933 (*R. L. Armstrong*).

342. *Erioptera (Erioptera) subfurcifer* Alexander. *Jour. N. Y. Ent. Soc.* 37: 51, 1929.

Connecticut: State Line Pond, near Stafford Springs, Tolland Co., altitude 1,000 feet, June 14-15, 1933 (*C. P. Alexander*). Bog,

two miles east of Putnam, Windham Co., June 15, 1933 (*C. P. Alexander*).

343. **Erioptera (Ilisia) graphica** Osten Sacken. Proc. Acad. Nat. Sci. Philadelphia for 1859: 227, 1859.

Massachusetts: Framingham, July 23, 1929 (*B. I. Gerry*).

344. **Ormosia holotricha** (Osten Sacken). Proc. Acad. Nat. Sci. Philadelphia for 1859: 226, 1859.

Vermont: Mount Haystack, altitude 2,000 feet, May 13, 1934 (*C. P. Alexander and Harry Pratt*).

Massachusetts: Mount Toby, May 19, 1934, May 9, 1935 (*C. P. Alexander*).

345. **Molophilus laricicola** Alexander. Jour. N. Y. Ent. Soc. 37: 55-56, 1929.

Maine: Mount Desert, Sea Wall Bog, June 19, 1935 (*C. P. Alexander and W. H. Harrison*).

New Hampshire: Errol, Coos Co., August 27, 1932 (*C. P. Alexander*).

Vermont: Willoughby Lake, Orleans Co., in bog, June 21, 1931 (*C. P. Alexander*).

346. **Toxorhina (Toxorhina) magna** Osten Sacken. Proc. Philadelphia Ent. Soc. 4: 232, 1865.

Massachusetts: Taupaushaw, Nantucket Island, August 27 (*C. W. Johnson*). (Pub. Nantucket Maria Mitchell Assoc. 3, no. 2: 121, 1930.)

CRANE-FLIES OF THE WHITE MOUNTAINS, NEW HAMPSHIRE

Since 1932, the writer has been engaged in an intensive survey of the tipulid fauna of New England's greatest mountain mass. To this date the study has embraced only the ranges adjoining the most easterly of the notches, Pinkham Notch, with the adjacent Carter and Presidential Ranges. Unusually valuable co-operation has been heartily extended by Mrs. Alexander and by Mr. Walter H. Harrison, botanist and naturalist, of Amherst, Massachusetts. It is planned in future years to continue the survey so as to include the northern and western peaks of the White Mountains.

A certain number of collecting stations mentioned in the accompanying list deserve discussion:

Tuckerman Ravine and Trail; from *Pinkham Notch* (2,000 feet), via *Hermit Lake* (3,600 feet); floor of ravine to top of headwall (3,800-5,000 feet).

Huntington Ravine, Mount Washington, fan and headwall, 4,000-5,200 feet.

Alpine Garden, above the headwalls of Tuckerman and Huntington Ravines, altitude about 5,000 feet.

Raymond Traverse, between Hermit Lake and Huntington Trail, 3,300-3,600 feet.

Great Gulf Trail, between Dolly Copp Camp and the Great Gulf Shelter, along the Peabody River and branches, 1,200-3,000 feet.

Dolly Copp Camp, on Peabody River, south of Gorham; largest public camp of the White Mountain National Forest; 1,200 feet.

Madison Spring Huts, between Mounts Adams and Madison; 4,800-5,000 feet.

King Ravine, Mount Madison, via Short Line, to 5,200 feet.

Valleyway Path, along Snyder Brook, Mount Madison, from Appalachia Station, near Randolph, to Madison Springs, 4,800-4,900 feet.

Webster Scout Trail, from summit of Mount Madison to Dolly Copp Camp, via Osgood Ridge and Culhane Brook.

Imp Face, 3,235 feet, on Carter Range, and trail to same from Dolly Copp Camp, 1,200 feet.

Carter Notch, 3,500 feet, between Carter Dome and Wildcat Mountains along Nineteen Mile Brook; Glen House, 1,620 feet, via the aqueduct.

Carriage Road to summit of Mount Washington, from Glen House.

All stations mentioned are on or adjacent to the Pinkham Notch Highway, Route 16, and all are included within the limits of the White Mountain National Forest.

Dolichocheza (Dolichocheza) americana Needham. Tuckerman Trail, 2,700-3,800 feet, July 2-3, 1933; Great Gulf Trail, 2,900-3,000 feet, July 4, 1933.

Dolichopeza (Oropeza) obscura (Johnson). Tuckerman Trail, 2,000 feet, July 2, 1933.

Dolichopeza (Oropeza) similis (Johnson). Tuckerman Trail, 2,800 feet, July 3, 1933.

Dolichopeza (Oropeza) venosa (Johnson). Tuckerman Trail, 2,400 feet, July 7, 1933; Great Gulf Trail, 2,200 feet, July 4, 1933.

Dolichopeza (Oropeza) walleyi (Alexander). Carriage Road, 3,100 feet, July 8, 1933.

Nephrotoma incurva (Loew). Dolly Copp Camp, 1,200 feet, June 30, 1933; Tuckerman Trail, 2,600 feet, July 3, 1933.

Nephrotoma penumbra Alexander. Tuckerman Ravine, 4,400 feet, July 2, 1933; Alpine Garden and slopes of Mount Monroe, 5,000-5,200 feet, July 9, 1933; very common, fluttering about over the alpine vegetation; one specimen was found emerging from its pupal skin, protruding from a cushion of *Diapensia*.

Tipula (Yamatotipula) cayuga Alexander. Dolly Copp Camp, 1,200 feet, June 30, 1933.

Tipula (Yamatotipula) iroquois Alexander. Tuckerman Trail, 2,700-4,300 feet, July 2, 1933.

Tipula (Yamatotipula) sayi Alexander. Mount Jefferson, 5,000 feet, August 22, 1935.

Tipula (Vestiplex) fultonensis Alexander (*hinei* Alexander). Tuckerman Trail, 4,100 feet, July 2, 1933.

Tipula (Schummelia) hermannia Alexander. Dolly Copp Camp, 1,200 feet, June 30, 1933.

Tipula (Schummelia) ideii Alexander. Tuckerman Trail, 2,700-2,800 feet, July 4-7, 1933.

Tipula (Oreomyza) latipennis Loew. Great Gulf Trail, 1,400 feet, July 4, 1933, teneral.

Tipula (Oreomyza) fragilis Loew. Nineteen Mile Brook, 2,500 feet, August 28, 1932; Webster Scout Trail, 3,000 feet, August 23, 1935.

Tipula (Oreomyza) insignifica Alexander. A few specimens at and near Madison Spring Huts, 4,800-4,875 feet, August 22-23, 1935. The specimens were found in the wet areas near the Springs and along the upper reaches of Snyder Brook; they occurred in dense balsam Krummholz, with many cold springs and

boggy areas; besides the dominant balsam, there occurred low stunted alder and birch, with patches of hellebore (*Veratrum*), chickweed (*Stellaria borealis* Bigel.), some *Solidago* and *Senecio*, and dense carpets of moss. The species had previously been known only from the unique type specimen, taken on the Alpine Garden, Mount Washington, by an unknown collector, and now preserved in the collection of the Boston Society of Natural History.

Tipula (Oreomyza) nebulipennis Alexander. Carriage Road, 4,700 feet, July 8, 1933; Lakes of Clouds Hut, 5,000 feet, July 8, 1933.

Tipula (Oreomyza) penobscot Alexander. Tuckerman Ravine, 3,300-3,900 feet, July 3, 1933; Carriage Road, 3,050 feet, July 8, 1933.

Tipula (Oreomyza) senega Alexander. Dolly Copp Camp, 1,200 feet, June 30, 1933; Great Gulf Trail, 1,400 feet, July 4, 1933.

Tipula (Oreomyza) entomophthoræ Alexander. Tuckerman Trail, 3,600-3,800 feet, July 2, 1933.

Tipula (Lunatipula) mainensis Alexander. Nineteen Mile Brook, 2,500 feet, August 28, 1932; Carter Notch, 3,000 feet, August 18, 1935; Tuckerman Trail, 2,000-2,500 feet, August 14, 1935, many specimens, flying close to ground; Carriage Road, 2,000 feet, August 25, 1932.

Tipula (Lunatipula) duplex Walker. King Ravine, 1,800-2,600 feet, August 26, 1935.

Tipula (Lunatipula) monticola Alexander. Great Gulf Trail, 1,200 feet, July 4, 1933.

Tipula (Lunatipula) triplex Walker. Dolly Copp Camp, 1,500 feet, August 26, 1932.

Phalacrocer a tipulina Osten Sacken. Hermit Lake, 3,600 feet, July 2, 1933.

Limonia (Limonia) cinctipes Say. Huntington Trail, 3,500 feet, August 15, 1935.

Limonia (Limonia) fusca Meigen (*pubipennis* Osten Sacken). Imp Face Trail, August 23, 1932; Dolly Copp Camp, 1,200 feet, June 30, 1933; Great Gulf Trail, 1,900 feet, July 4, 1933; Tuckerman Trail, 2,200-3,800 feet, July 3, 1933.

Limonia (Limonia) globithorax (Osten Sacken). Imp Face Trail, August 23, 1932; above Hermit Lake, 4,000 feet, August 24, 1932; King Ravine, 1,800-3,800 feet, August 26, 1935.

Limonia (Limonia) hudsonica (Osten Sacken). Dolly Copp Camp, 1,200 feet, June 30, 1933; Carriage Road, 3,200 feet, July 8, 1933.

Limonia (Limonia) immatura (Osten Sacken). Lakes of Clouds Hut, 5,000 feet, August 22, 1935 (*Paul Reis*).

Limonia (Limonia) indigena (Osten Sacken). Dolly Copp Camp, 1,200 feet, June 30, 1933; Tuckerman Trail, 2,000 feet, August 24, 1932, 2,400 feet, July 2, 1933.

Limonia (Limonia) simulans (Walker). Glen Ellis Falls, August 22, 1932; Huntington Ravine, 3,000 feet, August 21, 1935 (*Paul Reis*).

Limonia (Limonia) solitaria (Osten Sacken). Dolly Copp Camp, 1,200 feet, June 30, 1932; Great Gulf Trail, 1,300 feet, July 4, 1933; Carriage Road, 2,900 feet, July 8, 1933; King Ravine, 1,800 feet, August 26, 1935.

Limonia (Limonia) triocellata (Osten Sacken). Great Gulf Trail, 2,400 feet, July 4, 1933.

Limonia (Limonia) tristigma (Osten Sacken). Glen Ellis Falls, August 22, 1932; Glen House, 1,800 feet, August 28, 1932; Carter Notch, 3,000 feet, August 18, 1935; Carriage Road, 2,500 feet, August 25, 1932; Huntington Ravine, 4,600 feet, August 15, 1935.

Limonia (Discobola) argus (Say). Glen Ellis Falls, August 22, 1932; Carter Notch, 2,500 feet, August 28, 1932; Webster Scout Trail, 2,500-3,000 feet, August 23, 1935; King Ravine, 2,500-4,000 feet, August 26, 1935.

Limonia (Dicranomyia) iowensis (Rogers). Tuckerman Trail, 4,400 feet, August 14, 1935; Madison Spring Hut, 4,900 feet, August 22, 1935.

Limonia (Dicranomyia) liberta (Osten Sacken). Dolly Copp Camp, 1,200 feet, June 30, 1933; King Ravine, 2,700 feet, August 26, 1935.

Limonia (Dicranomyia) profunda (Alexander). Carter Notch, 3,500 feet, August 28, 1932; Carriage Road, 3,500 feet, July 8, 1933; Tuckerman Trail, 4,000 feet, August 14, 1935.

Limonia (Dicranomyia) spinifera (Alexander). Dolly Copp Camp, 1,200-1,500 feet, August 16, 1935, August 26, 1932; Nineteen Mile Brook, 2,500 feet, August 28, 1932; Carriage Road, 2,000 feet, August 25, 1932; King Ravine, 1,700-2,000 feet, August 26, 1935.

Limonia (Dicranomyia) uliginosa (Alexander). Tuckerman Ravine, 4,300 feet, July 2, 1933.

Limonia (Rhipidia) maculata (Meigen). Carter Notch, 3,500 feet, August 28, 1932; Carriage Road, 2,500 feet, August 25, 1932; Huntington Ravine, 3,500 feet, August 21, 1935; King Ravine, 1,500-2,000 feet, August 26, 1935.

Antocha (Antocha) opalisans Osten Sacken. Dolly Copp Camp, along Peabody River, 1,200 feet, July 1, 1933.

Dicranoptycha germana Osten Sacken. Nineteen Mile Brook, 2,500 feet, August 28, 1932.

Ula elegans Osten Sacken. Webster Scout Trail, 2,000 feet, August 25, 1935; King Ravine, 2,700 feet, August 26, 1935.

Ula paupera Osten Sacken. Nineteen Mile Brook, 2,500 feet, August 28, 1932; Great Gulf Trail, 2,900 feet, July 4, 1933; Tuckerman Ravine, 3,750 feet, July 2, 1933; Webster Scout Trail, 3,500 feet, August 25, 1935; Snyder Brook, 3,000 feet, August 26, 1935.

Pedicia (Pedicia) albivitta Walker. Dolly Copp Camp, 1,200 feet, August 16, 1935.

Pedicia (Pedicia) margarita Alexander. Nineteen Mile Brook, male and female, 2,000 feet, August 18, 1935 (*Walter Harrison*); Hermit Lake Hut, at light, 3,600 feet, August 14, 1935 (*Walter Harrison*).

Pedicia (Nasiternella) hyperborea (Osten Sacken). Tuckerman Ravine Trail, 2,800-4,000 feet, July 2-7, 1933; Carriage Road, 4,200 feet, in roadway with wind blowing violently (*M. M. Alexander*). For a detailed discussion of this noteworthy discovery, including that of the subapterous female, consult a separate reference (*Can. Ent.* 66: 116-118, 1934).

Pedicia (Tricyphona) auripennis (Osten Sacken). Tuckerman Trail, 2,700 feet, July 7, 1933.

Pedicia (Tricyphona) autumnalis (Alexander). Nineteen Mile

Brook, 2,500 feet, August 18, 1935, August 28, 1932; King Ravine, 1,800 feet, August 26, 1935.

Pedicia (Tricyphona) calcar (Osten Sacken). Tuckerman Trail, 2,700-4,200 feet, July 2, 1933.

Pedicia (Tricyphona) inconstans (Osten Sacken). Dolly Copp Camp, 1,200 feet, June 30, 1933, August 16, 1935; Tuckerman Headwall, 4,500-5,000 feet, in hellebore patches, abundant, August 14, 1935, August 24, 1932.

Pedicia (Tricyphona) vernalis (Osten Sacken). Dolly Copp Camp, 1,200 feet, June 30, 1933; Tuckerman Trail, 3,700-3,800 feet, July 2, 1933.

Dicranota (Eudicranota) pallida Alexander. Still known only from the unique type, collected in the White Mountains by Morrison.

Dicranota (Dicranota) iowa Alexander. Tuckerman Trail, 2,700-3,700 feet, July 2, 1933. Earlier reported by Johnson as *noveboracensis* Alexander, from 4,000-5,000 feet, Tuckerman Trail, July 8-21 (*Occas. Papers Boston Soc. Nat. Hist.* 5: 22, 1922).

Dicranota (Amalopina) flaveola (Osten Sacken). Glen Ellis Falls, August 22, 1932; Imp Face Trail, 2,500 feet, August 23, 1932; Nineteen Mile Brook, 2,500 feet, August 28, 1932; Hermit Lake, 3,500-3,600 feet, July 3, 1933, August 14, 1935; Tuckerman Ravine, 3,800-4,500 feet, July 3, 1933, August 14, 1935; Madison Spring Hut, 4,900 feet, August 22, 1935; King Ravine, 1,500-3,000 feet, August 26, 1935.

Dicranota (Plectromyia) modesta (Osten Sacken). Tuckerman Trail, 2,700-3,700 feet, July 2, 1933; Chandler Brook Cabin, Great Gulf Trail, 3,500 feet, July 4, 1933.

Dicranota (Plectromyia) petiolata (Alexander). Tuckerman Headwall, 5,000 feet, August 24, 1932.

Dicranota (Rhaphidolabis) cayuga (Alexander). Tuckerman Trail, 3,800 feet, July 2, 1933; Chandler Brook Cabin, Great Gulf Trail, 3,500 feet, July 4, 1933.

Dicranota (Rhaphidolabis) rubescens (Alexander). Dolly Copp Camp, 1,200 feet, June 30, 1933, 1,500 feet, August 26, 1932; Great Gulf Trail, 1,900 feet, July 4, 1933; Glen House, 1,800 feet, August 28, 1932; Carriage Road, at Halfway House,

3,500 feet, August 25, 1932; Tuckerman Ravine, 4,500 feet, August 14, 1935; King Ravine, 2,500 feet, August 26, 1935.

Dicranota (Rhaphidolabis) tenuipes (Osten Sacken). Dolly Copp Camp, 1,500 feet, August 26, 1932; Glen House, 1,800 feet, August 28, 1932; Tuckerman Trail, 2,000 feet, August 24, 1932; Raymond Traverse, 3,300 feet, August 15, 1935; King Ravine, 1,800-2,500 feet, August 26, 1935.

Adelphomyia americana Alexander. Dolly Copp Camp, 1,500 feet, August 26, 1932; Imp Face, 2,000 feet, August 30, 1932; Glen House, 1,800 feet, August 28, 1932; Carriage Road, 2,000 feet, August 25, 1932; Webster Scout Trail, 1,500 feet, August 25, 1935.

Adelphomyia cayuga Alexander. Imp Face Trail, 2,000 feet, August 23, 1932.

Adelphomyia minuta Alexander. Great Gulf Trail, 1,300-2,000 feet, July 4, 1933.

Adelphomyia pleuralis Dietz. Great Gulf Trail, 1,350 feet, July 4, 1933.

Epiphragma fascipennis (Say). Tuckerman Trail, 2,200 feet, July 2, 1933.

Phyllolabis lagganensis Alexander. Valleyway Trail, 4,200 feet, August 26, 1935 (see p. 275 for detailed account).

Dactylolabis pemetica, sp.nov. Huntington Ravine, headwall, 4,600 feet, August 15, 1935 (see p. 288 for detailed account).

Dactylolabis supernumeraria Alexander. Great Gulf Trail, 2,750-3,300 feet, July 4, 1933.

Prolimnophila areolata (Osten Sacken). Tuckerman Trail, 2,000-4,200 feet, July 2-7, 1933; Great Gulf Trail, 1,300 feet, July 4, 1933.

Pseudolimnophila contempta (Osten Sacken). Great Gulf Trail, 1,300 feet, July 4, 1933.

Archilimnophila toxoneura (Osten Sacken). Great Gulf Trail, 1,200 feet, July 4, 1933.

Limnophila (Elæophila) aprilina Osten Sacken. Great Gulf Trail, 1,900 feet, July 4, 1933.

Limnophila (Elæophila) johnsoni Alexander. Dolly Copp Camp, 1,200 feet, June 30, 1933; Great Gulf Trail, 1,900 feet, July 4, 1933; Carriage Road, 2,800 feet, July 8, 1933.

Limnophila (Prionolabis) munda Osten Sacken. Great Gulf Trail, 2,200 feet, July 4, 1933; Tuckerman Trail, 2,200-3,000 feet, July 2, 1933.

Limnophila (Prionolabis) rufibasis Osten Sacken. Dolly Copp Camp, 1,200 feet, June 30, 1933; Carriage Road, 2,700 feet, July 8, 1933.

Limnophila (Prionolabis) simplex Alexander. Great Gulf Trail, 2,200 feet, July 4, 1933.

Limnophila (Phylidorea) subcostalis Alexander. Tuckerman Ravine, 4,200 feet, July 2-3, 1933, abundant in hellebore patches.

Limnophila brevifurca Osten Sacken. Tuckerman Headwall, 5,000 feet, August 24, 1932.

Shannonomyia lenta (Osten Sacken). Glen Ellis Falls, August 22, 1932; Dolly Copp Camp, 1,500 feet, August 26, 1932; Glen House, 1,800 feet, August 28, 1932; Nineteen Mile Brook, 2,000 feet, August 18, 1935.

Pilaria harrisoni, sp.nov. Webster Scout Trail, 2,000 feet, August 23, 1935 (description on p. 291).

Ulomorpha pilosella (Osten Sacken). Dolly Copp Camp, 1,200 feet, June 30, 1933; Great Gulf Trail, 1,900 feet, July 4, 1933.

Hexatoma (Eriocera) spinosa (Osten Sacken). Tuckerman Trail, 2,000 feet, July 2, 1933.

Elephantomyia (Elephantomyia) westwoodi (Osten Sacken). Nineteen Mile Brook, 2,500 feet, August 28, 1932; Imp Face Trail, 2,000 feet, August 23, 1932; Dolly Copp Camp, 1,200 feet, June 30, 1933.

Cladura (Neocladura) delicatula Alexander. Nineteen Mile Brook, 1,800-2,500 feet, August 28, 1932, very abundant; Carriage Road, 2,500 feet, August 25, 1932; Webster Scout Trail, 2,200-2,500 feet, August 25, 1935; King Ravine, 1,800-3,500 feet, August 26, 1935.

Cladura (Cladura) flavoferruginea Osten Sacken. Nineteen Mile Brook, 2,500 feet, August 28, 1932; Webster Scout Trail, 2,000 feet, August 25, 1935; King Ravine, 2,000-2,700 feet, August 26, 1935.

Neolimnophila ultima (Osten Sacken). Tuckerman Trail, 2,200 feet, July 2-7, 1933.

Gonomyia (Gonomyia) bidentata Alexander. Glen Ellis Falls,

August 22, 1932; Glen House, 1,800 feet, August 28, 1932; Imp Face Trail, August 23, 1932; Dolly Copp Camp, 1,500 feet, August 26, 1932.

Lipsothrix sylvia (Alexander). Great Gulf Trail, 1,900-2,200 feet, July 4, 1933.

Rhabdomastix (Sacandaga) flava (Alexander). Dolly Copp Camp, 1,200 feet, July 1, 1933.

Erioptera (Erioptera) septemtrionis Osten Sacken. Dolly Copp Camp, 1,200 feet, August 30, 1932; Tuckerman Ravine, 3,800 feet, July 3, 1933; Madison Spring Hut, 4,900 feet, August 22, 1935.

Erioptera (Erioptera) viridula Alexander. Great Gulf Trail, 2,200 feet, July 4, 1933.

Erioptera (Mesocyphona) needhami Alexander. Dolly Copp Camp, 1,200 feet, June 30, 1933.

Erioptera (Empeda) stigmatica (Osten Sacken). Dolly Copp Camp, 1,200 feet, August 16, 1935; Tuckerman Trail, 3,300-4,400 feet, July 2, 1933, August 14, 1935; Hermit Lake, 3,500 feet, August 24, 1932.

Ormosia dentifera Alexander. Great Gulf Trail, 3,200 feet, July 4, 1933.

Ormosia bilineata Dietz. Great Gulf Trail, 2,000 feet, July 4, 1933.

Ormosia luteola Dietz. Tuckerman Ravine, 4,000-5,000 feet, August 24, 1932; Webster Scout Trail, 3,000 feet, August 23, 1935.

Ormosia monticola (Osten Sacken). Hermit Lake, 3,500 feet, August 24, 1932; Raymond Traverse, 3,300 feet, August 15, 1933; Webster Scout Trail, 3,000 feet, August 23, 1935.

Ormosia deviata Dietz. Hermit Lake, 3,500 feet, August 24, 1932; Tuckerman Headwall, 4,500-4,800 feet, August 14, 1935, very abundant in hellebore patches; Raymond Traverse, 3,300 feet, August 15, 1935; Madison Spring Hut, 4,700 feet, August 26, 1935.

Ormosia nubila (Osten Sacken). Glen Ellis Falls, August 22, 1932; Imp Face Trail, 2,000 feet, August 23, 1932; Dolly Copp Camp, 1,500 feet, August 26, 1932; Carriage Road, 2,000 feet,

August 25, 1932; Madison Spring Hut, 4,700 feet, August 26, 1935.

Ormosia megacera Alexander. Nineteen Mile Brook, 2,500 feet, August 28, 1932; Great Gulf Trail, 2,500 feet, July 2, 1933; Carriage Road, 3,000 feet, July 8, 1933; Tuckerman Trail, 2,700 feet, July 7, 1933.

Ormosia mesocera Alexander. Great Gulf Trail, 1,900 feet, July 4, 1933; Tuckerman Trail, 3,700 feet, July 2, 1933.

Ormosia nimbipennis Alexander. Nineteen Mile Brook, 2,500 feet, August 28, 1932; Imp Face Trail, 2,000 feet, August 23, 1932; Tuckerman Ravine, 4,500 feet, August 14, 1935, August 24, 1932; Webster Scout Trail, 2,300 feet, August 25, 1935; King Ravine, 2,500 feet, August 26, 1935.

Ormosia pygmaea Alexander. Dolly Copp Camp, 1,200 feet, August 16, 1935; Tuckerman Trail, 2,000 feet, August 14, 1935; Snyder Brook, 4,000 feet, August 26, 1935.

Molophilus fultonensis Alexander. Great Gulf Trail, 1,350-2,000 feet, July 4, 1933; Tuckerman Trail, 2,700 feet, July 7, 1933.

Molophilus hirtipennis (Osten Sacken). Tuckerman Trail, 4,200 feet, July 2, 1933.

Dasytomolophilus ursinus (Osten Sacken). Great Gulf Trail, 1,400-2,000 feet, July 4, 1933.

DESCRIPTIONS OF NEW SPECIES.

Dactylolabis pemetica, sp. nov.

General coloration of mesonotum dark brown, the scutellum black, the mediotergite yellowish brown; prescutum without distinct stripes; thoracic pleura brownish yellow, the anepisternum and sternopleurite a trifle more infuscated, the surface pruinose; wings (male) pale brown, the stigma very large, distorting the veins of the anterior radial field, the anterior branch of R_2 being chiefly atrophied; wings (female) more uniformly yellow, including the veins, the venation normal for the genus; cell 1st M_2 with inner end strongly arcuated in both sexes.

Male.—Length about 7-9 mm.; wing 8-9.5 mm.

Female.—Length about 6-7 mm.; wing 7-8 mm.

Rostrum brownish black; palpi black. Antennae black throughout; flagellar segments oval. Head brownish black, the front and broad anterior vertex pruinose.

Pronotum brownish black, somewhat paler laterally. Mesonotal prescutum almost uniformly dark brown, subnitidous, without evident stripes, in cases with the humeral region more yellowish pollinose; scutum dark brown; scutellum black; mediotergite yellowish brown. Pleura brownish yellow, the anepisternum and sternopleurite a trifle more infuscated, the surface pruinose; dorso-pleural region light yellow. Halteres pale, the knobs weakly darkened. Legs with the coxae brownish yellow; trochanters yellow; femora yellow basally, passing into brown; tibiae and tarsi brownish black. Wings (fig. 1, ♂; fig. 2, ♀) strongly dimorphic in venation in the two sexes, the radial field of the male being much distorted by the enlargement of the stigma. Wings of male uniformly tinged with pale brown, the color produced especially by

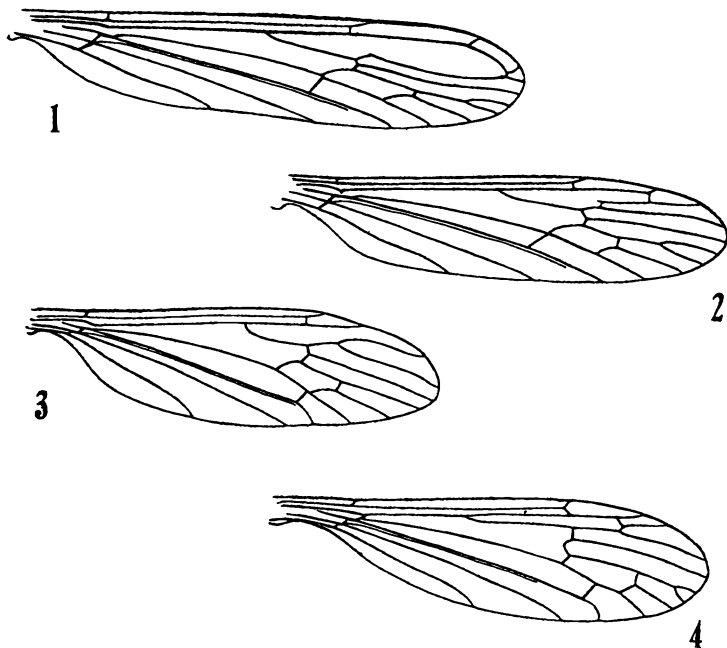


FIG. 1. *Dactylolabis pemetica*, sp.nov.; venation of male.

FIG. 2. The same; venation of female.

FIG. 3. *Phyllolabis lagganensis* Alexander; venation.

FIG. 4. *Pilaria harrisoni*, sp.nov.; venation.

the darkening of the included veins; wings of female clearer yellow; stigmal region faintly darkened in both sexes; veins brown to yellowish brown in the male, clearer yellow in female; costal fringe with numerous delicate setae in

both sexes; stigmal area of male with abundant delicate trichia. Venation (male) normal except for the radial field, which is curiously distorted by the unusually large stigmal area; branches E_4 and E_5 are normal but the anterior branch of E_4 is chiefly atrophied, on its outer portion being fused with E_{1+2} , the combined element bending down to vein E_4 and lying parallel to outer border of wing. In the female, the radial field is quite normal for the genus; cell $1st M_2$ elongate, with its inner end strongly arcuated in both sexes; *m-cu* at or close to fork of M .

Abdomen with basal tergites brown, the outer segments, including hypopygium, more brownish black; sternites more uniformly pale.

Habitat.—Maine, New Hampshire.

Holotype.—Male, Cañon Brook, between Dike and Cadillac Mountains, Mount Desert Island, Maine, altitude 600-700 feet, June 23, 1935 (C. P. Alexander).

Allotopotype.—Female, same date (M. M. Alexander).

Paratopotypes.—Twenty-five of both sexes, same dates (A. E. Brower, W. H. Harrison, C. P. and M. M. Alexander).

Paratype.—One female, headwall of Huntington Ravine, Mount Washington, New Hampshire, altitude 4,600 feet, August 15, 1935 (C. P. Alexander).

The specific name, *pemetica*, is derived from Pemetie, the Indian name for Mount Desert Island. The type series was taken along Cañon Brook where the flies occurred on the sheer walls of the cañon and on the sloping granitic stream-bed immediately above this point. The males were to be found resting on the vertical rock walls where the surface was wet with dripping and percolating waters, being associated with equally numerous specimens of *Dactylolabis montana* (Osten Sacken). The females taken were found nearby but chiefly on the sloping rocky bed of the stream margin where they were found to be ovipositing in the diatomaceous ooze and algal growth covering these rocks. The males were not readily disturbed and were most easily secured by placing the net over them while they rested on the sheer walls, whereupon they invariably flew backward into the bag.

The very remarkable fly herewith described is unique in the degree of sexual dimorphism as it involves the wing veins. The enlarged stigma of the male fills the space between veins E_1 and E_4 , the anterior branch of the sector being almost entirely atrophied. The only other generally similar species in the Nearctic region is *Dactylolabis cubitalis* (Osten Sacken), which has the coloration of the thorax gray, the prescutum with four distinct

brown stripes, the wings of both sexes normal and entirely similar in venation, and with cell 1st M_2 short, its inner end not conspicuously arcuated.

Distortion of the wings and their venation is found in certain other species of *Dactylolabis*, notably *D. wodzickii* (Nowicki) of the Hungarian Tatras, but in no case is the venation so profoundly modified as in the male of the present fly, nor is there definite evidence of sexual dimorphism in any other species of the genus. The only other crane-fly known to me with a tremendously enlarged hairy stigma in the male, distorting the veins in this field, is the eriopterine genus and species, *Empedomorpha empedooides* (Alexander) of the plains and Great Basin region of the western and southwestern United States (Kansas, Colorado, Texas, New Mexico and Arizona), an otherwise entirely different fly.

Pilaria harrisoni, sp.nov.

Mesonotum uniformly brownish yellow, the surface subnitidous, unmarked; antennae black throughout; wings weakly suffused with brown, the small stigma darker brown, restricted to cell R_2 ; vein R_2 only a little longer than R_{2+3} ; vein R_3 diverging strongly from R_4 ; $r-m$ strongly arcuated; cell 1st M_2 elongate, exceeding any of the veins beyond it; cell M_1 present but very small; $m-cu$ shortly beyond mid-length of cell 1st M_2 .

Female.—Length about 8 mm.; wing 8 mm.

Rostrum and palpi black. Antennae black throughout; flagellar segments passing through oval to long-oval, with long conspicuous verticils. Head brownish black, gray pruinose.

Mesonotum uniformly brownish yellow, the surface subnitidous, unmarked. Pleura yellow. Halteres pale throughout. Legs with the coxae and trochanters yellow; femora and tibiae yellow; tarsi black, the basitarsi chiefly testaceous-yellow. Wings (fig. 4) with a weak brownish tinge, the costal field slightly clearer yellow; stigma very small, darker brown, restricted to cell R_2 ; veins dark brown. Venation: Sc relatively long, Sc_2 ending almost opposite level of fork of R_4 ; R_2 only a little longer than R_{2+3} ; R_3 diverging strongly from R_4 , cell R_3 at margin about one-half longer than cell R_2 ; $r-m$ very strongly arcuated; cell 1st M_2 elongate, gradually widened outwardly, longer than any of the veins beyond it; cell M_1 present but very small, less than one-half its petiole; $m-cu$ shortly beyond mid-length of cell 1st M_2 .

Abdominal tergites brown, the sternites a very little brighter; ovipositor with the elongate valves brownish horn-color, the tips of the cerci paler.

Habitat.—New Hampshire.

Holotype.—Female, Osgood Ridge, along the Webster Scout Trail, Mount

Madison, White Mountains, altitude 2,000 feet, August 23, 1935 (C. P. Alexander and W. H. Harrison).

I take unusual pleasure in dedicating this crane-fly to Mr. Walter H. Harrison, of Amherst, Massachusetts, companion on many profitable field excursions, to whom I am vastly indebted for many rare insect specimens. The fly is readily told by the venational peculiarities of an unusually elongate cell $1st M_2$ and a very small cell M_1 . The venation of the outer radial field is much as in *Pilaria stanwoodae* (Alexander) which has cell M_1 lacking and with cell $1st M_2$ much smaller, shorter than vein M_{1+2} beyond it. The latter fly is confined to sphagnum bogs whereas the species above defined as new was swept from herbaceous vegetation in dry balsam and spruce woodland.