

Newfoundland Mayflies (Ephemeroptera)

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During the Finnish-Swedish expedition to Newfoundland, in 1949, a few samples of mayflies, ~~was~~^{were} collected by Drs. C. H. Lindroth and Ernst Palmén. Some specimens were added in 1951 when Dr. Lindroth revisited the island alone. This collection, which belongs to the Zoological Museum of the University, Helsingfors, was sent to me in 1957 by Dr. Per Brinck for identification.

A careful review of the literature indicated that only a single species of *Ephemeroptera* has been recorded from the island. The record is that of Walker (1853) of a species he named *Ephemerella hebes*, now recognized as *Leptophlebia cupida* (Say). The Newfoundland specimens now available include seven additional species in five additional genera, to bring the total species for the island to eight.

Dr. Brinck (1958) has discussed rather fully the relationships existing between European stoneflies and those of Newfoundland and Labrador. He found no species that are common to the two countries; in fact, he was impressed by the fact that the plecopterous fauna "of these areas consists of genera, subgenera or groups of species not at all represented in western Europe". In this paper, Brinck has also discussed factors militating against the establishment of European stoneflies in Newfoundland. Similar limitations exist among the *Ephemeroptera*.

The distribution of mayflies is regulated chiefly by suitable aquatic habitats being available for the immatures and the distance that adults must travel in dispersing. The brevity of adult life is a severely limiting factor in dispersion by direct flight or by strong winds. Such deterrents to dispersal make it very unlikely that there will be many species shared in common between Europe and North America.

Ephemerella aurivillii is the single exception in Newfoundland to the generalization that the Newfoundland mayfly fauna is exclusively Nearctic. The species was described from Sweden and subsequently recorded from Norway. Later McDunnough (1924) described a species, *Ephemerella norda*, from Alberta and Alaska, which since has been synonymized with *E. aurivillii*. A second North American species, *E. arronii* Eaton, was recorded by Walley (1930) from Bradore Bay, Quebec Labrador. This species, too, has been synonymized with *E. aurivillii* as has *E. concinnata* Traver from Montana. The distribution of *E. aurivillii* thus is seen to be holarctic.

Annotated List of Newfoundland Mayflies

Superfamily Heptagenioidea

Family Heptageniidae

Epeorus sp. — There are two collections of nymphs of this genus which cannot be specifically identified. Eleven specimens were collected at Table

Mountains about 3 miles N.E. of Cape Ray, S.W. Newfoundland, June 29, 1949, by E. Palmén. The second collection consisted of 2 nymphs taken at Waterford Bridge near St. John's S.E. Newfoundland, June 5, 1949, by E. Palmén.

Family *Baetidae*

Baetis sp. — Seventeen nymphs were collected at Table Mountains about 3 miles N.E. of Cape Ray, S.W. Newfoundland, June 29, 1949, by E. Palmén. A single female subimago was recorded from Cook's Harbour, N.W. Newfoundland, July 16, 1949, by C. H. Lindroth.

Callibaetis sp. — A single adult female seems to be a new species near *skokianus* Needham. Inasmuch as there is only one specimen available I am not describing it at this time. This female was collected at South Branch, S.W. Newfoundland, June 5, 1949. E. Palmén collector.

Superfamily *Leptophlebioidae*

Family *Leptophlebiidae*

Leptophlebia cupida (Say). — Nymphs, subimagos, and adults of this species appear most frequently in these Newfoundland collections. The species is widely distributed over the entire eastern half of North America, including southwestern Quebec, Nova Scotia, and Newfoundland. Specimens were collected from seven localities as follows:

Gander, N.E. Newfoundland. June 2, 1949, collected by E. Palmén. Sixteen nymphs questionably referred to *L. cupida*. — Rencontre West, S. Newfoundland. June 20, 1949. C. H. Lindroth collector. 4 ♂ adults. — Big Bay, Rencontre West, S. Newfoundland. June 19, 1949. C. H. Lindroth collector. 2 ♂ adults, 1 ♀ subimago. — Waterford Bridge near St. John's, S.E. Newfoundland. June 5, 1949. E. Palmén collector. 1 ♀ subimago, 5 nymphs. — Hogan's Pond, Portugal Cove, S.E. Newfoundland. June 6, 1949. E. Palmén collector. 5 ♂, 3 ♀ adults. — Howley, C. Newfoundland. July 11, 1949. C. H. Lindroth collector. 1 ♀ subimago. — Newfoundland, Mr. Norton collector. June 14, 1951. 1 ♂ subimago.

Family *Ephemerellidae*

Ephemerella prudentalis McD. — This species has been collected previously only in southern Quebec. The single male adult taken in Newfoundland represents a considerable extension of its range.

South Branch, S.W. Newfoundland. July 2, 1949. C. H. Lindroth collector. 1 ♂ adult.

Ephemerella cornutella McD. — The collection consists of nymphs only; however, as nymphal characteristics in *Ephemerella* are generally specific, I feel that I can safely place a name on these specimens. The species is known from western Nova Scotia, central New Brunswick, and generally throughout the eastern portion of Quebec and the United States wherever there are swiftly flowing streams.

Pushthrough, S. Newfoundland. June 24, 1949. C. H. Lindroth collector. 4 nymphs.

Ephemerella aurivillii Bengtss. — The known distribution of this species has been described above.

Table Mountains about 3 miles N.E. of Cape Ray, S.W. Newfoundland. June 29, 1949. E. Palmén collector. 3 nymphs.

Family *Tricorythidae*

Tricorythodes atratus (McD.)? — Inasmuch as a male is not available for final confirmation, I am questionably referring the single specimen to this species. *T. atratus* has been recorded previously from southern Quebec.

Grand Bank, Newfoundland, August 3, 1951. C. H. Lindroth collector. 1 ♀ adult.

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