



Cryophilic Isotomidae (Collembola) of the Northwestern Rocky Mountains, U.S.A.

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Abstract

Descriptions of Collembola from glaciers, snowfields and cold water seeps in Alaska, British Columbia, Alberta, Washington and Oregon are presented. *Myopia alaskana* Christiansen and Bellinger, and *Desoria uniens* Christiansen and Bellinger are redescribed. The following new species are described: *Desoria albicornis* sp. n., *Desoria triangularis* sp. n., *Desoria ater* sp. n., *Desoria garibaldi* sp. n., *Desoria pilifrons* sp. n., *Desoria cryophila* sp. n., *Desoria rosea* sp. n., *Desoria olympica* sp. n., *Desoria capra* sp. n. and *Gnathisotoma spinolabris* sp. n. One new genus, *Mucronia* gen. n. and its type species *Mucronia enigmatica* sp. n. are described from Alaska. The new genus possesses some characters of both the Isotomidae and Tomoceridae having a lobed post antennal organ and a mucro with two setae.

Key words: *Myopia*, *Desoria*, *Gnathisotoma*, *Mucronia*, redescriptions, new species, new genus

Introduction

The term "cryophilic" means "cold loving" and is here used to characterise Collembola living on glacial ice, permanent snowfields or along cold melt-water streams and seeps close to a snow source. Although single species from cold alpine habitats have been described, there are few studies devoted particularly to the characteristic cryophilic collembolan fauna (Yoshii 1971, 1990). The alpine (above tree line) Collembola of North America is only fragmentarily known. Fjellberg's (1984) paper from the Colorado Front Range is the only recent paper with its main focus on the Collembola fauna of an alpine environment. In this paper ten new species are described from this habitat, two are redescribed and one new genus with new type species are also included.

Material and methods

The material for the present study was collected during field work in southern Alaska in 1980 and in the Canadian Rocky Mountains in 1983 and 1984. Additional samples were provided by Dr. Paula Hartzell, collected during her studies of ice worms (Enchytraeidae) from glaciers in Alaska, British Columbia, Washington, Oregon and Alberta in 2002–2003. Specimens were either hand-picked directly into ethanol, or extracted in Tullgren funnels. During the rapid thaw of snowdrifts in early summer, large numbers of Collembola may be transported via the melt water. On one such occasion, in mountains above Juneau (Alaska), the melt-water carried Collembola into a small lake in the bottom of a north facing cirque. A fine-meshed insect net was placed into the narrow outlet stream between two stones and a handful of Collembola was collected in a short period. The sample yielded 40–50 species. Several of the new species described in this paper, including one new genus, originate from that sample.

Descriptions of the new species and genus are given below and summary of important diagnostic characters of the species documented is presented in Table 1.