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Two new records of Tipuloidea (Diptera) from a cold spring in NW Russia

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Abstract

Dicranota (*Rhaphidolabis*) *exclusa* (Walker, 1848) (Pediciidae) and *Tipula (Savtshenkia) benesignata* Mannheims, 1954 (Tipulidae) inhabit a cold spring habitat in the environs of St. Petersburg. The first species is for the first time recorded for European Russia, the second one, for Leningrad Province. The habitat is briefly characterized and illustrated.

Key words: Pediciidae, Tipulidae, *Dicranota*, *Tipula*, distribution, habitat, cold spring

Introduction

Two species of Tipuloidea recorded in this paper have been collected from a cold spring habitat (59°44.096'N 29°28.015'E; h=165 m), which is situated in Leningrad Province at the northern slope of the Izhora Upland near village Novaya Burya, about 40 km SW of St. Petersburg. The spring is a rheo-limnocrene with numerous outlets, surrounded by mixed forest. It is one of the sources of River Lopukhinka, a tributary of River Kovashi. The spring (including the upper section of springbrook about 20 m downstream of the limnocrene) is characterized by a year-round stable low water temperature (5.5–7.5°C). In the above-water layer of moist substratum at the water margin, the temperature never exceeded 10°C, while the air temperature could be 20–25°C. Mineralization of water varied during the year from 0.29 to 0.43 g/l, with hydrocarbonates determining over 90% of total mineralization. Water pH varied from 5.7 to 7.8. (The measurements were made from June 2007 to November 2008, no less than once in two weeks). Mean water discharge of the entire spring was estimated as ca. 700 m^3 per hour, but the water level and discharge strongly varied depending on the season and seasonal precipitation.

Higher vegetation is confined mostly to the shores of limnocrene and springbrook. It is represented by half-submerged tufts of the moss *Cratoneuron filicinum* (Hedw.) Spruce (the same species is abundant at the water margin, as well as *Brachythecium rivulare* Bruch et al. and *Drepanocladus sendtneri* (Schimp. ex C. Müll.) Warnst.) and by the angiosperms *Cardamine amara* L., *Chrysosplenium alternifolium* L. and *Epilobium* spp. Semiaquatic substrata at the water margins consist mainly of living parts and remains of above-mentioned plants, accumulated plant detritus of different origin (including leaves of trees, bark and timber), and mineral particles of different size (limestone sand and gravel, granite stones). The habitat is illustrated in Figs 1–2.

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