



Freshwater microcrustaceans of the Magadan District (Russian Far East): new data

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Introduction

Freshwater ecosystems of the Magadan district are one of the least studied among the territories of the North-East Russia. The aim of the study was to investigate and to inventory the fauna of microcrustaceans (Cladocera, Copepoda) of the Magadan District. To reveal rare and new species for the region, especially paying attention to the communities of the less explored water bodies – shallow lakes, ponds, and temperate puddles. To analyze the biogeographical status of the area and its connection to the ancient Beringian fauna.

Methodology

Studies were performed during the mid-summer (July) of 2015 at different areas of Magadan district of Russia. Totally, 38 water bodies were studied. Samples were mostly collected in shallow thermokarst lakes and ponds, and temporary puddles. Samples of zooplankton were taken quantitatively by hauling a plankton net (diameter 0.1 m, 50 μ m mesh) horizontally through the water column parallel to the bottom.

Results

In the present study, 59 crustacean species and taxa were found in the water bodies of the Magadan District: 26 Copepoda and 33 Cladocera. Eight of these crustaceans are new for the region, one was described as new to science (*Chydorus izvekova* sp. nov.). Notably, together with widespread in norther territories of Holarctic and Palaearctic regions and cosmopolite species (or unrevised species complexes with ambiguously wide areas), almost 25% of explored fauna consist of species with specific distributional ranges. There are species of East Asian-American complex and endemics of East Asia. Freshwater copepods of the Magadan district consist of a combination of Eurasian and North American faunas. The same holds for Cladocera. Together with widespread North Eurasian species there are some species, typical for the eastern part of Eurasia or North America. Some of these species of microcrustaceans specific only for Magadan District. Freshwater species with disjunctive areas from separated continents represent the relict fragments of the ancient Beringian fauna, disappeared with the transgression of the Pacific Ocean. The transient nature of the freshwater microcrustacean fauna of the Magadan district is a specific trait of this region.



The analysis of the biogeographical ranges of crustacean species in the Magadan District confirms its special status and the relation to the ancient Beringia. It also approves the idea that the separation of two main biogeographic provinces, Western Holarctic and Beringian, of the Holarctic has a wide transitional zone in Eastern Siberia. Crustaceans species here can differ from that in other regions due to the differences in geological and climatic events during the last glacial maximum and previous Pleistocene glacial cycles.

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