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COMMUNICATIONS

HETEROGENEITY OF VEGETATION COVER OF BAYDZHARAKH MASSIFS (KOTELNY ISLAND, NEW SIBERIAN ISLANDS)

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An increasing activity of thermokarst and other thermal denudation processes is noted in many regions of the Arctic. The massifs of baydzharakhs (groups of mounds with surrounding trenches) are one of the thermokarst relief forms. The heterogeneity of their vegetation appears at different levels of the hierarchy: from a mosaic of patches within communities of thermokarst mounds and trenches to the complexity of the supraphytocoenotic levels within entire massifs. The latter ones are a suitable model object to analyze the structure of vegetation territorial units of the first levels due to their substantial separation from surrounding tundra and an evident spatial patterning. The tasks of this study are to elaborate a hierarchical scheme of the heterogeneity of the massif vegetation and to analyze detailed maps made with different approaches of classification of vegetation, namely the ecological-phytocoenotical (on domination principle) and the Braun-Blanquet ones. In 1973–1974, on the Kotelny Island 20 baidzharakh massifs from 750 to 100000 m^2 were studied. The size, shape and vegetation of thermokarst mounds change during thermal denudation; 6 types of mounds corresponding to its stages were revealed. The massif including the mounds of only one type ("elementary massif") is a complex of communities (microcombination), but more often it consists of several elementary massifs (mesocombination). The ecological-phytocoenotic classification clearly separates the communities of both mounds and trenches, considering such features as the stage of development, position on the slope, total vegetation coverage, dominant species, etc.

With the Brown-Blanquet approach, the communities of all thermokarst mounds and almost all trenches in the study area were included in the variant **Oxyria digyna** of the zonal association **Salici polaris–Hylocomietum alaskani** Matveyeva 1998. Even the subvariants shown on the detailed maps often do not allow separating the vegetation of mounds and trenches. The elaboration of baydzharakh massifs typology as territorial vegetation units is important to obtain an actual assessment of thermokarst activity in different areas of the Arctic in connection with observing climate changes.

Keywords: thermokarst, baydzharakhs, heterogeneity of vegetation, territorial units, vegetation mapping, ecological-phytocoenotic classification, Braun-Blanquet approach, New Siberian Islands

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