



The study of cryogenic morphology of Quarternary deposits of the Western Taimyr coast (research in the frames of IPY 2007-2009)

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As part of International Polar Year program the field courses on geocryology took place at Western Taimyr coast in July-August 2007 for the students, studying the north. The purpose of the work is to apply the field methodology in the study of permafrost, morphology, properties and cryolithology of Western Taimyr Quaternary deposits and present-day cryogenic processes. The complex of such methods as geological and geomorphological, cryolithological, geobotanical, radiocarbon, landscape and geological was applied by the students. Obtained data allows to estimate the present-day situation in Western Taimyr permafrost zone and reconstruct conditions of permafrost evolution and formation in the past. During the expedition Pleistocene-Holocene deposits in coastal exposure of the right bank of Enisey river and Enisey Bay were studied.

Sanchugovskie marine and glacial-marine Middle-Pleistocene deposits and Kazancevskie marine and coastal-marine deposits of Late Pleistocene are referred to the epicryogenic type. As usual, the Middle-Pleistocene deposits are characterized by comparatively low ice content – up to 20 % in the volume, massive or nonregular cryogenic structure. The Late-Pleistocene Kazancevskie deposits have a higher ice content – up to 50 %, where embedded ice complexes with depth more than 10 meters were found. The Late-Pleistocene deposits of Karginskaya suite, Late Pleistocene-Holocene deposits of “ice complex” and Holocene deposits of contemporary deluvium refer to the syncryogenic type of permafrost. These

deposits are characterized by high ice content – up to 80% in the volume, belt-layered cryostructure. They contain polygonal ice wedges of 4 m wide in the upper part of the section and 10-12 m high.

Contemporary cryogenic processes of Western Taymyr coastal zone were studied. They are the following: coastal dynamics, ice wedges, thermokarst, etc. It is possible to see that for the last several decades the degradation of permafrost is observed in explored region. Two wells were equipped with loggers for the temperature regime monitoring of Western Taymyr accumulative land forms (alluvial spits). The bore holes are situated at the flat coast of Sopochnaya Karga lagoon. The results of the field studies will be processed and used for qualification scientific works of graduate and PhD students, who took part in the field courses.