

QUATERNARY EVENTS ON THE AREA OF THE LAPTEV SEA AND ADJACENT LAND

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The problem of the geological evolution of the Laptev Sea area in the Quaternary is significant part of studies of various paleoceanological, paleoclimatological and general geological aspects. An important point is the evolution of marine transgression/regression cycles controlled the changes of marine and continental regimes. There are some general geological and biostratigraphic evidences of the land condition in the Eopleistocene, the Early Pleistocene, the Middle and Late Pleistocene. In this time shorelines were in the north far away of the present position. Marine regime in large offshore area of the Laptev Sea, in accordance with the geological data, had been recorded in the Late Eopleistocene, the Early Pleistocene, in the middle time of the Middle Pleistocene and during the time of Kazantsevo interglaciation. In the western part of the Sea the marine conditions were more common than in the eastern area. The tectonic processes were an important agent in formation of landforms and bottom relief of the Sea and coastal zone. There are clear evidences on the tectonic influence on the creation of morphostructures of the Novosibirsky archipelago. Some features on their dependency as the continuation of the Middle Arctic Ridge and submeridional orientation of graben/horst structures on the shelf were found out. Some of them were confirmed by seismic records. Special studies were carried out to define the character of transport of sediments and sources of different kinds of sedimentary matter. Two important sediment sources are outlined. The first is related with great input provided by the large Siberian rivers: Lena, Olenek, Yana and some others. The second is related to degradation of permafrost during the time interval of Kazantsevo, Karginian interglacial and in the Holocene. These processes are typical for the coastal zone, river banks and islands. The Laptev Sea shelf area during the Pleistocene and Holocene was predominantly the transit zone for the Arctic geodepression, but some sediments were accumulated on the shelf.