



The Idea of Marine Exogenic Processes in Glacial and Contemporary Periods

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Ideas of exogenic processes on continental margin and in the open ocean of polar and moderate latitudes are based on the leading role of quaternary glaciation. Vast primary bottom relief and quaternary sediments' data, accumulated by the Russian marine research institutes, provided a possibility to have a new view on geomorphology formation of the North Atlantic, Norwegian – Greenland basins, West Arctic shelves and inland seas [Matishov, 1980, 1984; Matishov and Pavlova, 1990].

Analysis of bottom morphosculpture, including cartographic, geomorphologic, morpholithologic, seismoacoustic, and other methods, grounds our researches. As a result, previously held views on the forms' sculpturing and types have been reconsidered, as well as new theoretic principles of exogenic morphogenesis and vast continental glacial covers, spread onto the shelves and conditioning oceanic periglacial in deepwater parts of the ocean, have been developed.

Glaciers of continental type repeatedly covered the continental shelves of Europe and North America in the period of quaternary glaciations [Markov et al., 1965; Matishov, 1980, 1986]. Reconstructing the genetic picture of bottom pre-glacier landscapes, large thawing waters' runoff valleys, sandr plains have been indicated, thus letting propose the idea of «periglacial shelves». There are no structures of analogous dimensions on land. Glacial morphogenesis, in many aspects, was determined by pre-quaternary structure-geomorphologic plan.

Various glacial troughs, moraine ranges, water-glacier formations, now located at the depths from 50-200 to 400 m, are mapped on the glacial shelves in details [Matishov, 1984, 1987]. Capacities, substance composition, texture of moraine, fluvio-glacial and glacial-marine sediments, composing the forms of glacial morphosculpture, have been ascertained.

Most discussable is the problem of the Barents-Kara Sea shelf glaciation. Complex, but rather orderly Barents Sea shelf glacier morphosculpture, probably, was formed in the process of active spread of periphery parts of Scandinavian, Novaya Zemlya, Spitzbergen glacier covers from mainland to shelf. The fact is proved by detailed bathymetric maps, bottom relief regularities, lithology of subsurface moraines. Especially convincing are the newest radiocarbon dating of ancient coastlines of the Franz Josef Land, Novaya Zemlya, Kola Peninsula [Forman et al., 2004].

Cognition of marine and terrestrial ecosystems' evolution in contemporary and former periglacial zones requires quaternary geology and biology basic researches, reconstruction of Pleistocene and Holocene paleogeographic and paleoecological situations. Reconstruction of paleoclimate and paleobiogeocenoses (for instance, ancient soils) will let forecast dynamics of contemporary marine and terrestrial ecosystems in periglacial regions.