
BOOK REVIEWS

Pleistocene Marine Deposits of Russian Coasts¹

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The reviewed book published by A. A. Svitoch represents a seminal work on the marine Pleistocene of Russian seas. This nonordinary research is, at present, the first and the only generalization of the author's material and voluminous real material acquired by many specialists on Pleistocene marine deposits of Russian coastal regions. Of importance is that the author, a noted specialist in the geology and paleogeography of the Quaternary, has participated in studying reference sections of Pleistocene marine deposits for a long time. As the initiator and head of the working group on basic research of global correlation of geological and paleogeographic events in the geosystem continent–shelf–ocean, A. A. Svitoch contributed much to the comparative analysis of natural phenomena in the Pleistocene of the Ponto-Caspian and Mediterranean regions, marginal seas of the northwestern Pacific, and Arctic seas. In particular, he proved and substantiated differences in the natural process of formation of Arctic western and eastern coasts. In the Pleistocene, on coasts of the White, Pechora, and Kara seas, there were registered long transgressions embracing vast territories and invading for hundreds of kilometers into the continent. During this process, the North Atlantic warm waters entering these sea basins during interglacials promoted the boreal fauna migration and made the Arctic climate milder. Easterly, on the Laptev, East Siberian, and eastern Chukchi sea coasts, Pleistocene transgressions enveloped mainly islands and were not observed on the continent except in delta zones of major river valleys. Hence, it was inferred that east Siberian coasts were free from glaciers and the territory underwent no glacio-isostatic subsidence. On the Chukchi Peninsula, where mountain–valley glaciation existed, coastal piedmont depressions were flooded by cold water of the middle Krestovian transgression of the middle Pleistocene. However, the interglacial transgressions were very modest. The reason is not due to glacio-isostasy but due to the absence of appreciable tectonic subsidence of coastal territories.

Also noteworthy is the great contribution made by A. A. Svitoch to studying the history of the Beringia continent and coasts of Far East seas. It was shown that vast glacio-eustatic sealevel fluctuations greatly affected the paleohydrological conditions in all the marginal basins of the northwestern Pacific. During sealevel falls down to –100 m, which coincided with glacial epochs, the Bering, Tatar, La Pérouse, and Tsushima straits were closed. Due to emergence of land isthmuses, the whole hydrological situation was disturbed. For instance, the Sea of Japan turned into nearly a closed basin, and Pacific water came to the Sea of Okhotsk and Bering Sea only through the Kuril and Aleutian deep-water straits. The Beringia giant continent formed in the North Pacific undoubtedly affected the climate of the Arctic and North Pacific regions.

In addition to the introduction and conclusions, the monograph comprises two large sections. The first, regional section describes the structure, stratigraphy, and facies composition of marine deposits of all the sea coasts of Russia. Analyzed in the section is voluminous material on reference sections of Pleistocene marine deposits, biostratigraphy, absolute age, paleomagnetism, and key paleogeographic events.

The second section of the book represents a creative synthesis of documentary materials. It considers the principles and methods of the analysis and shows the dominating importance of the biostratigraphic approach to subdivision and correlation of marine deposits and paleogeographic events. The section also presents the correlation analysis of composite sections by basins, principal features of evolution of Russian marginal seas, as well as their typological and geographical systematization.

In terms of the good quality of the documentary material, the methods of its processing, as well as the results obtained, the monograph gives a very good impression. It is indispensable for a great range of specialists (geologists, oceanologists, and geographers) and can be recommended for university lecturers.

The book has already become a rarity because of the small edition (300 copies); therefore, a new edition of it is necessary, including an analysis of the latest studies on the Pleistocene marine deposits of Russia.

¹ Review of the monograph of A. A. Svitoch *Pleistocene Marine Deposits of Russian Coasts* (Geos, Moscow, 2003), 361 p.