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Pleistocene stratigraphy of southeastern coast of Caspian sea

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The marine Pleistocene of southeastern coast of Caspian sea (Western Turkmenistan), have been poorly studied. The authors conducted a detailed study of key sections of Western Cheleken the most complete section of the Caspian marine Pleistocene deposits in the region and obtained new material.

The Cheleken Peninsula is located in the coastal part of the western lowlands of Turkmenistan. This brachyanticlinal fold was formed in the nucleus by Neogene-aged rocks on the periphery of a variety of Pleistocene sediments, broken by faults at the sides and with active modern mud volcanism and high tectonic activity. The first studies consisted of an analysis of Caspian marine mollusks (as the basis for biostratigraphic subdivision) and radiocarbon analysis. The studies applied geomorphology and lithofacies methods.

From 2009 to 2014 we systemically studied key sections in western Cheleken, and with a high degree of reliability, defined all subsections of the Pleistocene in the Caspian region. Among them were the faunistically-characterized Urundzhik, Lower Khvalynian, Upper Khvalynian (Late Pleistocene), and Neocaspian horizons (Holocene). The Pleistocene section of West Cheleken is characterized by a plurality of different depth intervals, sometimes accompanied by washouts; varying degrees of washout intervals were observed between almost all stratigraphic layers.

Materials from systematic studies of reference sections along the coast of Cheleken, a detailed analysis of the faunal collections of fossil malacofauna and its radiocarbon dating have provided new data on the structure of specific sections of the still under-researched area of the Caspian coast. 1. In the general section of Pleistocene marine fauna, four layers make up its stratigraphic framework. 2. Identified and described faunal complexes of mollusks distinguish Urundzhik, Lower Khvalynian, Upper Khvalynian, and Novocaspian deposits. 3. For the first time, a radiocarbon age from a Western Cheleken section assigned a Khvalynian age to the deposits.

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