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Correlation of Quaternary sediments of East European Plain and Caspian Sea region



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Chronostratigraphical studies of the continental deposits in the southern European Russia conducted during the recent few years revealed the development history of the loess-soil formation (LSF) within the Pleistocene. In particular, it was established that LSF development in the southern parts of the European Russia has begun at approximately the time of the Brunhes-Matuyama magnetic inversion (about 780 thousand years ago). The data on the fauna, paleosoils, and palynological data make it possible to start an analysis of the steppe zone evolution from its origination in the Late Miocene (app. 7.5 mln years ago), to follow its development throughout the entire Late Cenozoic, and the refore outline the trend of its further development. Along with the LSF, the territory in question contains sub-coastal formations – lagoon and marine deposits of various ages, which were formed throughout the Quaternary. It creates the necessary prerequisites for correlation of the continental and marine deposits, both of the inland Caspian Sea, and of the Sea of Azov, which is connected to the World Ocean through the Black Sea. Studies of temporal and spatial relationships of marine and continental layers in the region will permit us to correlate landscape and climatic changes on land with the ‘regional’ level oscillations of the Caspian Sea, as well as with the oceanic level changes of the Azov and Black seas.

Preliminary studies loess-soil formation on various terraced levels of the Eastern Azov rivales prospects for the reconstruction of landscape and climate change with high resolution throughout the late Cenozoic. The first results of the research are published in several articles. Application paleopedological, paleontological, palynological, paleomagnetic methods allowed more fundamental approach to the chronological assessment of individual horizons. The study of a number of key sections of Azov region and the Volga region allowed specifying the chronological position and underlying subaqueous deposits, which is the basis of the estimated correlations of continental and marine sediments. Based on comprehensive research the diagnose of various types of different aged soils of humid, subarid and arid ecosystems, was developed, reflecting the evolution of the Quaternary interglacial phases of soil formation and the emergence of steppe formations in the Miocene-Pliocene.

To date, based on the extensive research, new factual results was obtained for the Pleistocene and Holocene of the Caspian and Black Sea and the Manych depression. Compiled stratigraphic schemes made on the basis of a unified biostratigraphic correlation - on features of spatial-temporal distribution of the genus *Didacna* Eichwald, which is promising for the correlation of the quaternary deposits of Caspian Sea and Pontus. Through comparison of loess-soil series of Azov Sea region with marine and estuary-lagoon sediments of Pontus it is possible to correlate the deposits of the East European Plain Caspian sea region. An additional source of important data will be study and correlation of Caspian deposits from continental formations involving the horizons of fossil soils.

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