

Palaeogeography of the Caspian Sea marine Pleistocene

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Vertical succession of the fossil molluscs of *Didacna* genus along the Pleistocene sequence of the Caspian Sea area allows for detailed subdivision of the sediments. Zone, i.e. the Caspian Sea Pleistocene, is the highest stratigraphical unit of the regional Quaternary stratigraphic scale. It corresponds to the biozone of *Didacna* Eichwald subgenus. Based on the fossil groups of *Didacna* molluscs, the deposits are subdivided into the Baku, Urundzhik-Singil', lower and upper Khazarian, Khvalinian, and post-Khvalinian horizons. Further subdivision is based on the changes in *Didacna* assemblages.

Three big transgressive epochs are distinguished in the Pleistocene history of the Caspian Sea that were separated by deep and long regressions. These are the Baku, early Khazarian and Khvalinian transgressions. In transgressive sea basins, the sea level reached the height of 40-50 m and was regulated by the outflow of the Caspian waters into the Black Sea via the Manych depression. The areas of transgressive basins were similar. At the Caucasian coast, the extent of the Baku and early Khazarian transgressions exceeded that of the Khvalinian transgression, while in the Northern Caspian Sea Region the latter was slightly more extensive than the preceding ones.

The Urundzhik, late Khazarian and New Caspian transgressions represented sea-level rise of lower rank. All of them were recorded within big regressive epochs being usually related to warm (interglacial) climatic conditions: Singil' (Likhvin), Mikulino and Holocene, respectively.

Like at present, the Pleistocene Caspian Sea represented a self-regulating system. Maximal extent of ancient sea basins was dependent upon the height of the Manych sill (that was the main regulating factor), the amount of precipitation, river runoff, and decrease in evaporation. Minimal extent of the sea basin was dependent upon the area and capacity of its southern and middle depressions. At the same time, the rest states (extents) of the Caspian Sea, which probably corresponded to the major part of the Pleistocene epoch, were regulated by different components of the sea water balance.

As a whole, water salinity in the Central and Southern Caspian Sea experienced only slight changes during the Pleistocene epoch and was, in general, similar to the present salinity in these areas. In the Northern Caspian Sea Region, salinity variations were considerably more significant. During transgressive epochs salinity was growing. During the Pleistocene, correlations between different tendencies of the Caspian sea-level changes varied considerably. They were either coincident, or opposite, or partly coincident. Duration of regressive epochs was comparable with that of the transgressive phases and stages.

Judging from the duration of ancient regressive stages, the modern Caspian Sea is either at the beginning or at the middle of the regressive epoch, and the presently observed sharp sea-level rise is nothing but a positive sea-level change (oscillation-convulsion) within a big negative rhythm.

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