

TENTATIVE RECONSTRUCTION OF THE PAST IN THE ARALO-CASPIAN BASIN.

First cycle (Pliocene).

Opens with high relief of Pliocene mountains.

Closes with low relief of Central Asia's peneplain stage; great Pliocene Aralo-Caspian Sea; broad continuity of grass over the plains and gently rolling steppes of their worn-down peripheral mountains.

Second and third Cycles (Quaternary).

Preglacial: High uplift of peripheral mountains and general sinking of plains with upbending of their margins; change to high relief brings intense aridity and shrinkage of the great Pliocene sea till separated into an Aral* and Caspian as small if not smaller than the present. Most of what was water and grass in the first cycle is changed to barren desert.

Glacial: Toward the end of the second cycle there begins the first epoch of the glacial period with its increase of precipitation † effected by mundane change; expansion of valley glaciers and ice-domes in the mountains, and birth of the great Russian ice-cap; swelling of rivers and seas till all unite into one hydrography, an Asiatic mediterranean reached by all the rivers of its basin; broad continuity of grass steppes and moderate climate with vast accumulation of loess. Between the second and third cycles a second peripheral uplift takes place with a sinking of the plains and marginal deformations of the piedmonts. A long time lapses between the first and second glacial epochs and these are followed by a third and possibly a fourth epoch.

Postglacial: The glacial sea (survives a while longer?) supported by melting of the last epoch's ice, and maintains a moderate climate. As glacier ice vanishes, desiccation prevails under return to normal aridity and the sea withdraws to lower and lower shores till only the Usboi overflow connects the Aral and Caspian. It is a period of free alluviation over steppes abandoned by the sea; a period of incalculable wandering of large rivers, and vast accumulations of flying sands.

Fourth cycle (Archeologic).

Uplift of peripheral mountains (so far slight, but still in process), and sinking of plains with varied warpings and marginal deformations; consequent incision of water-courses on the plains constraining alluviation to limited areas (and deep dropping in of the Caspian Sea floor in its southern half?); shrinkage of sea-water area severing the Usboi overflow (uncertain shifting of the Amu and Syr between the Aral and Caspian, twice leaving the Aral—once before Christ and once 1550 A. D.—as a shrunken marsh or lakelet with little or no influx?); recent 200–300 feet recession of glaciers; contraction of streams, shrinkage of living loess, and expansion of flying sands; depopulation of withering oases.

*The Aral may have dried up entirely.

†It may have been colder, but we have no proof either way.