

Stop 2/4. Baymouth barrier of Dniestrovsky liman (DLBB)

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The baymouth barrier varies in width from 1 km, where it is attached to the east side of the mainland coast, to 70-100 m. A natural inlet, called Tsaregradsky Girlo, occurs in the western part of the barrier, where it acts as a connection between the liman and the sea. The surface of the barrier consists of sandy beach and dune deposits. The absolute elevation of the barrier ranges from 0.5 to 4.5 m. At present, its natural landscape is altered by extensive development. Numerous boreholes reveal deposits of Middle-Late Pleistocene and Holocene age (Fig. 29). The erosional downcutting of the Dniester River valley penetrated 74 m of Neogene deposits. Thickness of the Middle-Late Pleistocene alluvium averages 20-30 m. The Late Pleistocene alluvium (Antsky horizon) corresponds to one of the stages of the Neoeuxinian regression. Based on radiocarbon dating, the age of the alluvium is 17,050 yrs BP (borehole #221).

Higher on the outcrop, on the reworked surface of the Neoeuxinian alluvium (-20 to -30 m), lies a layer of the transgressive series of the Neoeuxinian basin. It is 1-2 m thick and consists of organic liman clays with large amounts of plant fragments and peat horizons. The radiocarbon age of these deposits is 9,500 yrs BP. This point marks the beginning of the formation of the modern liman and the mouth of the Dniester River.

Still higher on the outcrop, on the reworked surface of Neoeuxinian liman clays, lies a thick (6 to 15 m) formation of Bugazian and Vityazevian sandy muds of the Drevnechernomorian ("Ancient Black Sea") Horizon. The top of these deposits sits at absolute elevations of -14 to -10 m. The surface of the Drevnechernomorian deposits is also reworked. This reworking took place during the regressive phase, ca. 6,200 yrs BP, which we call Drevnechernomorian (Voskoboinikov et al., 1982a, b; Konikov, 2005; Konikov and Pedan, 2005).

The beginning of the Novochernomorian ("New Black Sea") phase of the Holocene transgression marks the initiation of the Dniester baymouth barrier, which evidently accreted from both the eastern and western sides of the liman. The body (lithosome) of the barrier is composed of shell-rich sandy deposits with thin interbeds of silt and sand.