

## DYNAMICS OF THE COASTAL NORTH PONTIC AREA IN LATE PLEISTOCENE AND HOLOCENE AND EARLY HUMAN DISPERSAL

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The initial expansion of anatomically modern humans (AMH) and the spread of Upper Palaeolithic (UP) technologies in the Northern Black Sea area occurred during 40 - 25 k.y. BP. This process became further intensified during the LGM, 25-15 ka BP. Both these periods coincided with the 'transitional' and 'cold' phases of the Dansgaard-Oeschger (DO) cycles, and included at least three 'Henrich episodes' H4 (38 ka BP), H3 (31 ka BP) and H2 (24 ka BP). During all that time the Black Sea depression was taken up by the Neoeuxine fresh-water mega-lake with the Caspian type molluscan fauna. At 30-25 ka BP its level was 87-90 m below NN. The exposed shelf jointly with the North-Pontic Lowland south of the Dnepr formed a huge erosion-depositional plain, which included the Pra-Prut, Pra-Dniestr and Pra-Bug alluvial plain. Further to the south, lie the terraced alluvial plain, formed by the lower stretches of the Dnepr, Dniester and Danube with their extended marshy flood-plains, and separated by local watersheds. An actively developing low-lying deltaic accretion plain was located closer to the shelf outer rim. It consisted of numerous river branches with sand bars separating marshes and mires (Larchenkov, Kadurin 2005). UP sites of that age (such as Sagaidak 1, Anetovka 2, Amvrosievka, and Muralovka) are usually found inside deep valleys of the small river, which provided for natural protection in harsh environment (Stanko *et al.* 1989). This type of landscape were excessively rich in biomass, guaranteeing stable and diversified food resources. The common occurrence of similar landscapes makes one suggest, that similar settlements occurred in the actually submerged part of the shelf.

With the onset of the Recent Neoeuxine stage at 18 k y BP, the sea-level raised reaching 55 m below NN, submerging the deltaic accretion plain and more than a third of the alluvial plain. The rise of the base level led to an intensive lateral erosion, and an increased deposition inside the river valleys. The accrete Dnepr-Dniester valley with its large marshy areas remained in place on the terraced alluvial plain with the altitude less than 40 m. The Danube valley became separated by an extended watershed, eroded by several river valleys. One notes the absence of the deltas in the mouths of major rivers (except the Dnepr), due to the active hydrodynamics in the coastal area.

At the Neoeuxine final stage (12 ka BP), the sea-level reached 37 m below NN, submerging the greater part of the terraced alluvial plain. At this stage, the sea intruded deep into the Dnepr and Dniester lower stretches, forming huge estuaries, separated by small-size watersheds. The Danube estuary formed the plain's western limit (Larchenkov, Kadurin 2005).

At the stage, the Late Palaeolithic population was greatly affected by the critical decrease in the availability of wild game resources. Both mammoth and woolly rhino being exterminated, starting with 18 ka BP, the bison became the principle hunting prey. The subsistence strategy increasingly relied on the exploitation of wetland resources, with the prominence of waterfowl hunting. Correspondingly, the microliths and retouched blades, seen as elements of projectile tools, became dominant in lithic inventories.

One notes the general outflow of the population in the southern direction and an intensive settlement of the wetlands. A network of settlements arose in the valleys of smaller rivers and ravines in southern Bessarabia. One may reasonably suggest the similar type of settlements occurring in the submerged part of the shelf (Stanko 2006).

The onset of the Holocene marked the beginning of the New Black Sea transgression in an environment of increased temperature of precipitation. During the Bugazian stage, 11 - 9 k.y. BP, the level of the brackish-water basin with rare occurrences of Mediterranean saltwater molluscs reached 18 m below NN. During the Vytyazian stage, 9 - 7.1-6.5 ka BP, the sea-level attained c. 9 m. below NN. During these stages, the sea nearly entirely submerged the terraced alluvial plain, deeply ingressing into the estuaries. The Dnepr estuary took form of a large gulf with the coast-line close to the present one. A large section erosion- denudation plain remained south of the Dnepr Valley.

The Mesolithic sites (10-8 ka BP) show a diversified settlement pattern. The largest settlements (such as Mirnoe) are found on the lower terraces of smaller-size estuaries. The subsistence of these sites was nearly entirely based on the seasonally-patterned exploitation of wetland resources with an increased reliance on the plant food. Geometric microliths, elements of composite projectile tools, became prominent in the tool-kit (Stanko 2006)..

The initial stage of Neolithisation is documented by early pottery-bearing cultures: Rakushechny Yar (8-7 ka BP), Surian (6.8-7.2 ka BP) and Bug-Dniestrian (7.4-7.1 ka BP). Resulting from impulses emanating from the east, their subsistence was based predominantly on the exploitation of riverine landscapes. Starting with 6.5-6.0 ka BP, in an Altithermal environment, the sea-level raised to 1-2 m above NN., submerging the Kilia section of the Danube Delta as well as a considerable part of the lower Dnepr valley. During the regressive stages small islands arose at the place of the Odessa Bank and Tendra sandpit.

During that stage the main features of present-day relief emerged in the coastal area, with two major catchment areas in the south-west and north-east, separated by the watershed 180-300 m high. The modern soils developed on the Quaternary substratum, included at least 20 varieties, including highly fertile chernozems. The forests were restricted to the watersheds and river-floors. This period coincided with the initial spread of early agricultural communities: Tripolye-Cucuteni and Gumeltitsa (6.5 - 6.0 ka BP). Early farming settlements were located on the edges of erosion-denudation plain bordering river valleys in the areas of chernozem of degraded chernozem soils (Dergachev, Dolukhanov, 2007). The initial Greek colonisation coincided with the regressive sea-level fall at 2.5-2.0 ka BP.

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