

THE EVOLUTION OF THE KUBAN DELTA'S COASTAL AREA IN THE LATE HOLOCENE

N. A. Tyunin

RL of recent sediments and Pleistocene paleogeography, Geography Faculty, Moscow State University, Moscow, Russia

nictun@mail.ru

ИСТОРИЯ РАЗВИТИЯ БЕРЕГОВОЙ ЗОНЫ ДЕЛЬТЫ КУБАНИ В ПОЗДНЕМ ГОЛОЦЕНЕ

Н.А. Тюнин

НИИ новейших отложений и палеогеографии плейстоцена, географический факультет МГУ им. М.В.Ломоносова, Москва, Россия

The Kuban Delta has been developing during the Holocene. The delta is characterized by the dynamic coastal area. The modern coastal area is partially digested by human. The main idea of the research is to explore the evolution of the Kuban Delta's coastal area in the late Holocene. The idea falls into some tasks. 1) Analysis of published materials; 2) description of geographical position and geologic & geomorphic structure of the coastal area; 3) sampling, sample analysis, interpretation of the results; 4) reconstruction of the evolution of the coastal area and of the hole ACHU-1's site. during the Late Holocene.

The RL of recent sediments and Pleistocene paleogeography sent an expedition to research the deltas of Southern Russia in 2016 summer. Author, as a member of field team, worked at the Kuban Delta. Geomorphic description of the delta sites was made. Two holes were drilled. Lithologic description of core and sampling to paleogeographic analyses were made. The object of my research is the hole ACHU-1 (16 m). It is situated near to Protoka mouth. Protoka is the right tributary of the Kuban River.

Then the ACHU-1's core was analysed in laboratory. Grain size (65 samples, N.Tyunin), carbonate content (65 samples, N.Tyunin), mollusc shell (D. Semikolennyh), geochemical (10 samples) analyses were made. In addition, three radiocarbon dates (H. Arslanov) were received.

As a result, author drew the geologic section of the hole. This section was divided to six layers. The first layer is swamp soil (0,2 m). The second layer is yellow fine sand (2,9 m; Md=0,199 mm) with debris and shells *Cerastoderma glaucum*. Radiocarbon age of the mollusk shells is 240±80 years (LU-8426). The carbonate content is 12,1 %. The third layer is dark grey, blue-grey and black fine sand (3,2 m; Md=0,161-0,216 mm; carbonate content 3,8-18,9 %) with silt. The fourth layer is dark grey and blue-grey loam (3,5 m; Md=0,005-0,008 mm; carbonate content 0,7-4,2 %). The fifth layer is dark grey and black silt-clay (3,6 m; Md=0,003-0,005 mm; carbonate content 0,5-6,2 %) with shell interlayers (*Cerastoderma glaucum* & *Mytilus edulis*). The shells' radiocarbon age is 2880±100 years (LU-8427A) & 2860±100 years (LU-8427B) respectively. The sixth layer is brown and red-brown loess loam (2,6 m; Md=0,002-0,005; carbonate content 0,0-5,7 %) with gypsum nodules.

According to contemporary view the Kuban delta was shallow sea gulf in the Early Holocene. The sea level often changed. The gulf is gradually occupied by sea & river sediments and divided to

unconnected basins. The basins drew up slowly. The sea coastline changed its position time and again. The modern coastal area has been forming during last 2-3 thousand years.

The sediments of the hole ACHU-1 shows quick changes of the environment on this site during the Late Holocene. The sixth layer formed in semi-arid land conditions at the end of the Late Pleistocene (possibly). The fifth layer (~3000 years) corresponds to shallow-water sea, lagoon and then fresh lake. The fourth layer has sediments of the fresh basin. The Kuban distributaries sometimes flew into this basin. The third layer formed on the limit between beach and swamp. The second layer (~250 years) corresponds to beach. The first layer is modern swamp soil.

The research made under the RGS project (07/2016-P)