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Bone and Antler Items From Peat-Bog Settlements (the 6th - 3rd mill. BC) of North-Western Russia (Dnepr - Dvina Basin). Technological and Functional Features.

The systematic research of archaeological heritage on the territory of Lovat'-Dvina interfluvium (and in general, the Dnepr-Dvina basin) is connected with activity of Prof. A.M. Miklyaev (1934-1993). Under his management the Nevel'skaya expedition of the State Hermitage (created in 1964; soon renamed into the Northwest expedition of the State Hermitage), for several decades has successfully opened sites of various cultures and archaeological periods and have been studying them in detail. Work of the expedition is in process (under the direction of A.N. Mazurkevich)., Settlements of the Neolithic – the beginning of the Bronze Age which occupation layers have been preserved in wet peat-bog ground have been found and explored among open sites of the Stone Age. Due to that fact not only pottery and stone artefacts have remained, but also products from organic materials – wood, bone and antler.

Bone and antler implements are presented on several settlements of Lovat'-Dvina interfluvium: Usviaty IV, Dubokrai I and Dubokrai V, Serteya II, Serteya X, Rudnya Serteyskaya and Naumovo, Udvyaty I, Dyazditsa I, II, it contains more than 300 objects. This category of finds includes: finished products (utilitarian and not utilitarian character), their preforms and production wastes. This circumstance allows to consider the material not only from the point of morphology and analogies, but it lets us study manufacturing techniques with definition of function of tools on the settlements. Safety degree of items surface is quite good in general, that gives opportunity to analyze it on macro- and microlevel. Bone and antler implements of the settlements belong to the periods from early till the late Neolithic to the beginning of the Bronze age, have various cultural attribution, based on a complex of distinctive signs of ceramic and flint artefacts altogether with the received absolute dating.

Bones of trade animals (an elk, a red deer, a bear, a boar etc.) served as raw materials for processing. Species diversity of the used bones varied within existence of different archaeological cultures of this region.

By results of the technological analysis of bone and antler artefacts of the settlements two stages of processing of raw materials are allocated. Preforms receiving for various categories of items and traces of primary treatment connected with it, are characterized

by the following operations: fracture with the help of heavy object, longitudinal or latitudinal knapping using preliminary prepared (in a case with an antler raw materials – notched) grooves, knapping using the cracks, transversal fracture by bending, chopping. Different operations could be made on the preform – scraping, drilling, abrasion and polishing. These operations connected with the secondary treatment of the preform. These traces are overlapping, usually, traces of the preform making, sometimes, partly or entirely destroying them. That is why, existence of not only finished pieces but also items with traces left on different stages of modelling is very important in order to reconstruct the whole “chain of operation sequence”. Treatment was made by flint tools. Only at late stages (the layer A, the Bronze Age) of the settlement of Usviaty IV existence traces of treatment by a metallic tool are fixed. In general, material is distinguished by the production care, in some cases it doesn't let us define either raw materials or the extent of its processing.

On the basis of studying macro- and the microtraces, connected with using, information about function of concrete tools on the settlement has been obtained. The available material, in general, reflects a typical for a Neolithic period picture of using of bone and antler tools: treatment of skins (piercing, cutting and scraping), wood treatment (from removal of bark and piercing of birch bark to works with volume forms), work on wet and dry clay (at production of ceramic pottery). The wide arsenal of the implements was used in hunting and fishing. In addition the analysis of microtraces of using has allowed to reveal specific, not standard, forms of bone and antler tools which purpose wasn't obvious.

The Early Neolithic settlements Serteya X and Rudnya Serteyskaya are generally presented by various types of arrowheads. Available types of arrowheads are typologically close to finds from the Baltic region, to the Narva culture heritage. Here we can see poor toolkit, and its morphological and technological features have no continuation in tradition of treatment of bone and antler on the settlements of the middle and late Neolithic periods in this region. Not numerous items of these sites speaks, apparently, about their narrow economic and cultural specialization.

Settlements of the Usvyatskaya Middle Neolithic culture (Usviaty IV, Dubokrai V, Dyazditsa I, II) present the formed set of various bone and antler tools. Ways of treatment and receiving items from bone and antler on these sites also coincide, having the identical traditions connected with builders of the pile-dwelling settlements. Material is presented by almost all categories of tools from bone and antler, displaying all range

of domestic and trade life. These are knives, polishers and spatules, spoons, chisels, pressure flakers, points, arrowheads, harpoons. A considerable part amount jewelry and objects of art.

On the basis of addition of various cultural components Late Neolithic traditions have developed. These processes have found reflection in bone and antler items. Certain categories of products continue to be used (spatules, for example), but also new forms, new categories appear (scraper on a wood, fish knife). Material of the settlements of Naumovo, Dubokrai I, Udvtyati I and Serteya II is not numerous, but various.