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Adaptation and some aspects of the genesis of archaeological cultures. Evidence from the Caucasian sites of Early Holocene

ABSTRACT

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The end of the Upper Palaeolithic to the beginning of the Mesolithic in the Caucasus marks the addition of a series of archaeological cultures in which there were specialized hunting economies. Cave bear was the primary animal hunted by groups of the Black Sea cultures of Western Georgia. The wild horse dominated in the northwestern Caucasus, and the Asiatic moufflon and wild goat predominated at sites on the central plateau of the northeast Caucasus (Daghestan). The analysis of archaeological inventories of these sites indicates that types of implements associated with specialized hunting are diagnostical for the identification of cultures under study.

Parole chiave: Paleolitico Superiore, Mesolitico, economia, caccia, Caucaso.

Key words: Upper Palaeolithic, Mesolithic, economy, hunting, Caucasus.

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The cultural adaptation, as appropriate accommodation of the technology, manufacturing processes and morphology of the household equipment to the necessities of survival provides the governing factor of the culturogenesis itself.

But the isolation and the analysis of precisely this kind of adaptation presents the most complicated task of the research. It is well known that it is often difficult and even impossible to trace the accommodative character of the basic part of the material culture by the example of common sites of the Palaeolithic with non specialized economy. Nonetheless, a remark concerning the fact «that aspectual specialization of the Upper Palaeolithic hunt is not embodied in flint implements of sites» (GVOZDOVER, 1974, p. 48-52) seems to be too categorical. Supporters of this point of view operate with the fact that distinguishing features of various industries owe completely to the ethnographic or, if more widely, to the social factors. Thus they forget that the determination itself of specific features depends upon techno-typological characteristics of the implements. The social, ethnographic factors do not give rise but conserve only the cultural stereotypes already elaborated. And the occurrence of cultural specific features is determined by the accommodative nature of the culture. The uniformity of harpoons of the Magdalenian of the France, of the Mesolithic of the Caucasus and of late stages of the Stone Age of the Arctic region is explained by precisely this fact and not by social factors. While all the variability of means of adaptation, a field of variations is not however boundless. It is just this point that underlines numerous examples of cultural convergency.

There are several reasons why researchers come sometimes to the negative conclusion concerning availability of association between technological specific features of implements and economic activity. Some of these reasons depend upon research approach to the problem, other ones upon specific features of the sites themselves. Among the formers, for example, there is a search to resolve the task to be sought by a procedure of operating by excessively large categories of implements. Otherwise, quite the reverse, by support on products of lower levels of classification (e. g., varieties of some type of armatures) without considering a fact that these objects must be not an individual tool but only element of complex implement. There are occasions when evidence is examined partially, i. e., only flint or only bone implements are taken into account. The lack of bone implements is perceived sometimes as reality and not as possibility of taphonomic, planigraphic or other peculiar features of a site.

A representative reason of an objective nature in this set is as follows. The most part of the Palaeolithic and Mesolithic sites contains a wide variety of remains of aspectual composition of animals and nearly the same variety of implements which can be qualified as elements of a hunter's weapon. In this case there are no data on predestination of a definite type of products for application hunting definite kind of animals.

A case when there are remains of practically one kind of animals and 1-2 types of implements at a site which by common consideration seem to be suitable for a hunt, is defined as optimum and even almost resembling pure experiment. In such an event all mentioned above causes hampering the analysis of the problem are eliminated almost completely. It is remarkable that with apparent exclusiveness such cases do occur. An example is found in three synchronous early Holocene sites of the Caucasus which are diagnostical for three various archaeological cultures. The case in point are such sites as Chokh, Satanai and Kvachara.

The Chokh settlement (KOTOVICH, 1964; AMIRKHANOV, 1982) is located on one of plateau-like upland of the Central Daghestan on the northeastern Caucasus. The abso-

lute height of the settlement location is 175 m above sea level. The Chokh is a site of open type «leaned» against a rock wall. The cultural deposit of the sites includes three rather thick layers. Two lowest ones comprise practically the whole Mesolithic stage. At least five horizons of habitation are marked on various levels of these layers. Actually these levels seemd to be considerably more numerous. The upper layer belongs to the early Neolithic. Functionally the site is determined as stationary camp. It was here that the entire technological cycle of tools production was carried out and household life of the Mesolithic people was proceeded. Two Mesolithic layers are excavated on 17 and 98 sq. m. respectively. The number of artifacts exceeds 40 thousand units. The site is eponymic for the Chokh archaeological culture. The latter was considered as principally the Upper Palaeolithic culture prior to the new investigations of the author of the present work in 1980-1982.

The Satanai site (AMIRKHANOV, 1978) is located in the northwestern Caucasus in Borisovskoe canyon where flows the Gubs river of the Kuban river basin. Unlike the Chokh settlement, the Satanai is located in piedmont zone on small absolute height. The cultural deposit is rather thick and lithologically uniform. The site is a basic one. The 45 sq. m. were excavated; more than 15 thousand bone and flint products were found. On archaeological grounds the site is dated to transitional period to the Mesolithic or by the early Mesolithic. The site is eponymic for Gubs archaeological culture.

The Kvachara site (TSETETELI, 1973), as opposed to two previous ones, is located in the Trans-Caucasus and is a typical cave site. It is located in one of the canyons cutting off the Tsebelda plateau. Geographically it is a low-mountain relief of the western part of the Caucasus of the Black Sea region (Abkhazia). The site height above sea level is 750 m. The cave depositions contain 3 cultural layers, one belonging to the end of the Upper Palaeolithic and two to the Mesolithic. The evidence of the Upper Mesolithic layer is excavated on the area of 150 sq. m. The obtained collection of archaeological objects includes 1443 products. The composition of implements allows to determine the site as base camp. The Kvachara cave is a basic site of the Mesolithic culture of the western Caucasus of the Black Sea region. The archaeological evidence allows to date the site to the early Mesolithic.

The landscape environment of the envisaged sites during the period of their functioning was various. The Chokh site was surrounded by a middle-mountain steppe, the Satanai was located on the boundary of the steppe and the piedmont broad-leaved forests, and the Kvachara was in a zone of the low-mountain thinned forests. The fauna of regions surrounding the sites was also various.

These three sites are interesting from this point of view since they show a highly specialized hunting used by a population having occupied them. But when discussing this, one should remember that notion itself «attributive specialization of a hunt» is not quite definite as applied to archaeological data. There are no universally adopted criteria giving possibility for different researchers to determine the distinction between specialized and non-specialized hunt. The affiliation of 75-80% of all faunal remains of object of hunting at some site to one specie may consider as good reason to determine a hunt of occupants of a given site as a specialized one. Besides, for this conclusion it is required to meet some more conditions: a certain site shall be a basic one, excavations shall cover a major, unless total, part of a site, a quantitative domination of bone remains of a definite kind of animal shall reflect really the predominance of summary volume of calories granted by just this kind of object of the hunt.

The Chokh, Satanai and Kvachara sites meet mentioned above conditions of the analysis. This is best manifested in quantitative characteristics reflecting the selectivity of the hunt. Thus, near 90% of faunal remains of the Kvachara cave belongs to the cave bear, 97% of bones from the rock shelter Satanai - to the wild horse and 98% of bones from cultural deposit of the Chokh settlement represents the wild goat and moufflon-like sheep. Just simple recognition of these points is sufficient for conclusion on degree and character of the interrelationship of economic activity and natural environment in the end of the Upper Palaeolithic to the beginning of the Mesolithic of the Caucasus.

The state of the evidence does not permit to get an answer to the question: why does such a distinct sudden change take place towards strict specialization of the hunt in the end of the Upper Palaeolithic? And it is not a simple question how widely this process was spread on the Caucasus. The basic composition of the Upper Palaeolithic fauna did not suffer qualitative modification by the beginning of the Mesolithic. Besides the available early Mesolithic evidence of the Caucasus seems not to demonstrate always such a distinct picture of a hunt selectivity which is seen in the Chokh, Satanai and Kvachara. But nevertheless listed sites along with those composing an integral part of respective archaeological unities enter regular the formulation of the problem concerning some fundamental changes in the exploitation of natural resources in the end of the Upper Palaeolithic to the beginning of the Mesolithic in the Caucasus. By this time in three regions of Caucasus at least (North-East, North-West, Western Trans-Caucasus) apart from faunal regional specific features appears one change more of quantitative relationship of kinds of animals in favour of wild sheep and goat, in one case, of wild horse in a second, and of cave bear in a third. Naturally, for such an extensive mountain land as the Caucasus with variety of its landscapes and close proximity of various coenoses (from steppe to subnival), the cited conclusion looks somewhat simplified and straightforward. But it is yet applicable for characterization of the quite definite ecological niches corresponding to the considered archaeological evidence.

The scientists engaged in the archaeozoology have noticed the resemblance of the above-stated situation with some other episodes of the Palaeolithic past of the Caucasus. According to their conclusions, «the ecological groupings of animals (of mountain-meadow, mountain-forest, mountain-steppe regions) at various chronological levels have different "specific gravity". This point fixes the dynamics of location of the altitudinal belts' limits and of climatic environment» (BARYSHNIKOV, 1978, p. 15). Thus, in Acheulian layers of the Kudaro I cave, bone relics of cave bear account for 75-85% of all relics of animals-objects of hunting (LUBIN & BARYSHNIKOV, 1982, p. 204), in Mousterian layers of Dzhirchula cave up to 98%, of Sakazhia cave 80% (LUBIN & BARYSHNIKOV, 1985, p. 5). All cited sites form a part of the northern Caucasian area of Caucasus mountain region of the Mediterranean faunistic sub-region. The reported figures, of course, do not characterize the entire Acheul and Mousterian of this region. For Mousterian layers of the same Kudaro I cave the importance of cave bear is reduced up to 30% encountered with substantial predominance of red deer and Caucasian goat in general composition of fauna (LUBIN & BARYSHNIKOV, 1982, p. 204). On the North Caucasus within the boundaries of the Caucasian cismontane steppe province forming a part not of the Mediterranean faunistic sub-region, but already of the European-Kazakh one, a selective hunting is also noted on one of Mousterian section. An example is provided by the Il'skaya site where relics of only one species, of bison, account for 88% from total composition of animals objects of hunting (LUBIN & BARYSHNIKOV, 1985, p. 5).

Thus, the specialization of a hunt on preferentially one or two similar kinds of animals is noted on various sections of the Caucasian Palaeolithic and is explained by factors of biogeographical character. But the reflection of such on conserved till nowadays relics of material culture is pronounced in various degrees for sites of different stages of the Palaeolithic. As applied to the Lower Palaeolithic, this problem requires special analysis. The most generalized examination seems to argue for the fact that during hunt on big game (horse, bison, wild donkey) the development of hunt equipment follows in the direction of preferential use of relatively large flat points which if being manufactured of stone are associated usually with bifacial technology. However it seems characteristic not only for the Caucasus and not only for the Lower Palaeolithic. To reveal more concrete impact of a hunting strategy on the genesis of archaeological cultures, i.e. on formation of local specific distinctions of the material culture, future investigations shall cover the relationship of selected hunting implements of temporary camps and of composition of basic hunted animals, whose relics account for 80-90 and more per cent in such camps. The present work arises the problem of pursuance of such comparison for sites of three different archaeological cultures. Taking into account that here we are dealing with basic sites, the inferences seem to be more justified than if to consider evidence of temporary camps or to use data of sites having various functions.

So, to the beginning of the Mesolithic population of various regions of the Caucasus come up against specific for each of their groups zoogeographical situation. All these regions have in common the fact that during this period a noticeable changing of landscape takes place everywhere, what requires an adequate adaptation of the entire strategy of survival to the new conditions in each case. The latter point had to be realized in improvements of hunting armatures too. And what are the general directions of this new orientation? In the Chokh settlement new needs are realized in the same material which is basic for all the Palaeolithic of the Caucasus, i.e., in flint. In the Kvachara the flint is combined with the bone for armature point manufacturing and in the Satanai a new type of bone point appears, which does not demand the use of armatures. And here a moment of typological innovation in the form of invention is noted certain in two latter cases and probable in the case of the Chokh. The importance of this innovation is determined by the next point. Firstly, it is precisely these types that constitute one main distinction of the archaeological cultures represented by the Chokh, Satanai and Kvachara. Secondly, it is precisely they in each case offer the only for corresponding inventory tool suitable for the hunt in general, or a maximally adapted tool for the hunt on that kind of animal whose relics constitute an absolute majority on a site.

Below we shall consider the typological characteristics of tools in question and try to give proof of their functional purpose. In the Chokh layers the total category of points (arrowheads) is represented practically by one type, so called «point of the Chokh type». An ideal specimen of these tools may be characterized as a tool an blade or flake with thinned butt and diagonally truncated edge. The dimensions of these tools are not big: their length is 2.5 - 3 cm on the average. The total or partial oblique retouching truncation of one of the edges represents a fixed indicator. As for the second indicator, the thinning of the butt, it fluctuates. In accordance with this fluctuation, four modifications of points of Chokh type may be determined: a) with thinning of butt from ventral face; b) with thinning of butt from dorsal face; c) with thinning of butt from both ventral and dorsal faces; d) with naturally thinned butt. Both in quantitative relationship and by more intensive character of secondary processing, the first variant is foremost. The ma-

jority of covered implements have triangular or sub-triangular shape (variant «c» in particular). The total analogies to the points of the Chokh type are unknown either on the Caucasus or in geographical proximity. On this basis they are considered as the most expressive type diagnostical for the Chokh archaeological culture.

Isolated specimens of two point modifications more of gravette-like and with edge-notch, are found in one of the lower horizons of the Chokh settlement. The rarity of their occurrence only underlines the significance of basic for a given site type of point and reflects a directivity of technical search for elaboration of an optimum for the particular task element of hunting equipment. When taking into account the above faunal composition of the Chokh settlement, it is an easy matter to conclude that this type of implements was intended for the hunt on wild sheep and goat and is defined as an arrowhead. The functional verification of estimation of these points as arrowheads is in the presence of longitudinal negatives from thin «thread-like» burin's flakes on working edges of some of these objects. The researchers who studied this problem, have noted that such negatives may often appear on arrowheads after their use. If so, it is possible to note that for the Chokh there are cases of return on the site with carcasses of obtained during hunt animals and with having arrowheads killed these animals.

We now direct our attention to the Satanai site. The place occupied in the Chokh by points of Chokh type corresponds in the inventory of Satanai to large two-ended bone points. They were manufactured from splitted along broad parts of pipe bones of wild horse. The starting blank was processed as to give to the point a symmetrical shape in plan and in profile. In the result, the flattened double-edge points of elongated shape were obtained, more often lens-like in cross-section. On the average, their length is 14-17 cm, the width 2.5 cm, and the thickness 0.5-0.7 cm. This point shape is characteristic to the Gubs archaeological culture.

If we are dealing with flint points of Satanai rock shelter, we may count here five modifications. Two of them may be identified as arrowheads by their morphological characteristics. These are point on blades with continuous semi-abrupt retouch trimming on edges and just the same points with single retouched edge and flattening trimming of the top end from ventral face. They seemed to be arrowheads. But the dimensions of implements (on the average, length 4 cm, width 0.8 cm) do not permit to conclude that these were precisely these tools that represented a main weapon for the hunting on wild horse as chief object of the hunt. These implements are practically unsuitable for the hunting on aurochs, whose bones also occur on the site. To confirm the suggestion we may recall that almost all known Palaeolithic and Mesolithic finds of animal bones with fragments of stuck in them hunt weapons or with traces of hitting on a hunt, indicate the use of elongated large heads, more frequently of bone, for hunting on big game (ABROMOVA, 1979; ROBERTS, 1936; HALLAM *et al.*, 1973).

For the Kvachara site a bone point is also characteristic but of a distinctly different type than in the Satanai. This is an elongated (length is 20 cm on the average) tool with rounded cross-section (thickness up to 1.5. cm) and tanged ends; along the head there are two symmetrical notches for flint armature. The notches begin almost near the top end of a head and stop short of reaching a butt. The earliest emergence of such implements on the Caucasus is registered in the final Palaeolithic horizons of the Gvardzhilasklde cave. The early Mesolithic culture of the Black Sea basin of the Georgia represented in particular by the Kvachara cave displays the resemblance to the evidence of the Gvardzhilasklde; this resemblance seems to have an underlying genetic cause. If rich

collections of the Gvardzhilas-klde possess only one specimen of these tools, then the Kvachara has a large and expressive series of them which includes also practically complete specimens. There are grounds to agree with researchers who identify this tool as dart head (Tsereteli, 1973, p. 131). But there are the same reasons to consider it as a head of a bear-spear.

As to flint points, they are represented here by about the same specimens as in the Satanai rock shelter. It is apparent *a priori* that they could not be used as a head of a weapon of a hunting cave bear. It is evident that from all available tool specimens, only described above bone heads could be used for this purpose.

So, within the limits of geographically single mountain land, of the Caucasus, there may be isolated three more or less synchronous archaeological communities. Their cultural heterogeneity is stipulated by variations in food-stuff and associated with them specific features of economic strategy.

The above analysis shows that contrary to popular declarations concerning priority of social factor in the process of the genesis of archaeological cultures, it is just the character of natural environment that is beneficial to the occurrence of the most expressive specific features of local archaeological formations. It clearly manifests itself when examining even such obviously uncomplete data on vital activity of prehistoric people as material relics. The differences between communities having produced various archaeological complexes were of course more scaled and were not limited only to specific features of shapes of some implements. These implements themselves being undoubtedly ethnodifferentiating elements of a culture, partially allow to reveal these facets of prehistoric cultures which are beyond the reach of direct observation. In a given concrete case they indicate, for instance, principal distinctions in ways and methods of the hunt and, consequently, distinctions in such basic domain as the culture of survival.

Another facet of the problem which can be envisaged on the interpretative level already, is it the evaluation of various strategies of the survival with respect to their impact on the dynamics of the social development. In the societies of hunters with bow and arrows and individual manner of the hunt, and in the societies of hunters with spear and predominantly collective way of hunting, the social regulations, for instance, is the sphere of bag distribution, are embodied variously. In these societies the formation of values of social prestige and of family institution also proceeds in a different manner. This problem constitutes a big and special topic which is impossible to investigate only within the framework of the archaeological analysis.

From the above consideration a fact also proceeds that the cultural adaptation under mountain conditions has by no means an universal character leading to uniformity. It is more variable than on vast plains. It is conceivable that this explains a wide variety of cultures peculiar for mountain land. And the roots of this variety seem to stretch back into the Stone Age.

RIASSUNTO

Il periodo che va dalla fine del Paleolitico Superiore fino all'inizio del Mesolitico segna la comparsa nel Caucaso di una serie di culture archeologiche con economie basate sulla caccia specializzata. L'orso delle caverne era la preda principale cacciata da gruppi di genti delle culture del Mar Nero nella Georgia occidentale. Il cavallo selvatico dominava nella zona nord occidentale del Caucaso ed il muflone asiatico e la capra selvatica predominavano nei siti posti sull'altopiano centrale del Caucaso nord orientale (Daghestan). L'analisi degli inventari archeologici di tali siti indica che i tipi di utensili connessi con la caccia specializzata hanno una importanza diagnostica per l'identificazione delle culture prese in esame.

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