DISCONTINUITY IN THE UPPER PALEOLITHIC OF HUNGARY

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Considering all these finds attributed, sometimes even at the price of compromises, to the Upper Paleolithic, the number of Hungarian Upper Paleolithic sites rises only slightly above fifty (DOBOSI 1975: 68-70). Among them are settlements well attested by excavations, which have been completely or partially unearthed as well as scattered finds regarded as Upper Paleolithic only because of their topographical location. The latter were recovered from loess surfaces where there were no well characterized sites from which these atypical flakes could have derived. Though the quantity of Upper Paleolithic sites in Hungary is increasing every year, the number still falls well behind that of the classical French or Ukrainian areas. So we have to cope with the task of filling a 35-40 thousands years period and covering an area of 93 thousands kms2, with limited information.

It is noteworthy that, according to our present knowledge, the archeological sites and consequently the population density in the inner regions of the Carpathian Basin were in small number in the earlier phases of the Pleistocene as well.

In the middle Paleolithic, for instance, the settlement pattern as well as the lithic industry are very varied. However, developmental trends are hard to trace and the chronological ordering of cultural stages is difficult to establish. A detailed discussion need not to be included here (GABORI 1976: 70-82). The number of Upper Paleolithic sites appears even smaller when compared with the population density of the more recent prehistoric periods. The existence of several thousand Neolithic settlements (BACSKAY 1978: 429-432; BACSKAY 1981: 551-559; BACSKAY 1982: 543-553) suggest that the Early Holocene population density was equal to, or even greater than, that of modern days at least in certain areas.

A detailed analysis of Upper Paleolithic sites indicates that even within the few sites known, chronological ordering can be established. In the second half of the Würm glaciation, were several long periods during which the Carpathian Basin was "empty". I offer here a possible explanation of this phenomenon. probably the main reason is in the geographical location of the Carpathian Basin, with all the ecological consequences that placement determined. The Carpathian Basin has a central position in Europe. What is more important, it is isolated by high mountains from the climatic zones characteristic of other European regions. The Carpathians Mountains and the Dinaric Alps separate the Basin from the Eastern European Steppe on one side and from the Mediterranean on the other whereas the Eastern Alps separate the Basin from the Western-European humid zone. The position of the Carpathian Basin was a critical factor during the Ice Age when ecological conditions determined the migration of human groups more directly. The arch of the Carpathians influenced the direction of migrations of faunal waves and thus influenced and determined the direction and speed of the distribution of paleolithic cultures.

The Carpathian Basin was not covered by ice-sheet even in the Würm stadials. It was separated from the ice fronts by zones of different width along the Carpathian range. The

width of these zones depended on local relief conditions. It would seem that, in contrast the areas covered by the ice-sheet, parts of the Carpathian Basin, the existence of vegetation and that on animal and human populations was possible even during the stadials. Nevertheless, the data available to date contradict this, or at least, do not support it. Permanent human settlement in the inner parts of the Carpathian Basin existed only during the interstadials.

The terminal Pleistocene climatic history of this region can be reconstructed only in broad outlines. The scale of Pollen spectra is unfortunately too large (JARAI-KOMLODI 1966: 131; LORINCZ 1972: 128-129), and the microfauna recovered from caves represent only the mid-mountains milieu. On the basis of these scanty data, the last cold peak of the Würm, about 15-16 000 BP, is characterized by average July temperature of about 12°C. The lower parts of the Great Hungarian Plain were covered by marshy taiga, with scattered small tundra enclaves. Ecologists generally think that the wild animal breeding capacity of forest environment is only a small portion of that of open steppes. In forest, the average mass of flesh per km2 is 300-600 kg, while in the savannah, in extreme cases, animal mass may reach 20-30 thousand kg per km2. In non-producing economies the quantity of flesh gained by hunting had a decisive importance on the human population density of an area. it is even more important in the Paleolithic, because cold climate requires increased meat consumption. It is highly possible that during the coldest periods the carrying capacity of the Carpathian Basin was radically decreased.

It was Miklos Kretzoi, who called attention to the special importance of hearths found in Paleolithic occupation levels. According to ethnological analogies, human groups who have become acclimatized to extreme arctic conditions do not use roasting or baking to process meat, if only because of lack of wood. Hearth remains known from our Paleolithic sites at least show that the paleolithic inhabitants of these settlements had not arrived at that level of adaptation and were still cooking meat.

The climatic conditions of the stadials suggest that the Carpathian Basin had become empty of human populations from time to time. This is supported by the chronological data from Upper Paleolithic sites (GABORI-CSANK 1976: 10; KROLOPP 1977: Tabl. 1).

We have a different view namely, that the Carpathian Basin became occupied periodically, from time to time, but only for short periods between long intervals. I do not want to deny that the chronological ordering of paleolithic sites is still in question since only a few sites with even fewer solid C14 dates are available.

Nevertheless, the analysis of young loess sequences corroborates the archeological date. On this bases, it is possible to distinguish four settlement phases which presumably formed the main course of events of the Late-Würm history of the Carpathian Basin.

Unfortunately we have only incomplete knowledge on these phases. Different periods are represented by various numbers of sites, and the sites themselves are of different quality. Further more, it is even more difficult to extend the consequences which we have drawn from concrete date, to the whole territory of the country. It is first of all because certain features of the sites (e.g. whether they are cave or open air sites) substantially influence the character of a given cultural unit. Different ecological niches result in different faunistic assemblages, at least as regards the relative proportions of different species. Specialization in food procurement or in hunting is possible only when hunting of the dominant game animals of a given environment had developed. Consequently even nearly contemporaneous sites, belonging to the same settlement phase, may show notable cultural differences if the ways of life of their inhabitants were different. That is why typological observations are not always sufficient to determine the age of certain sites, when the recovered assemblage does not contain materials suitable for chronological classifications.

THE FOUR ABOVE-MENTIONED SETTLEMENT PHASES ARE AS FOLLOWS:

First phase is 39-40 000 BP. It is represented by the lower cultural layer at the Istallosko cave where several "pointe en os à base fendue" were found together with an Aurignacian chipped stone industry (VERTES *et al.* 1955. 111-291). The main game animal was cave bear which suggests the survival of certain Middle Paleolithic traditions (VÖRÖS 1984.22). Open air sites are unknown from this period.

Second phase is represented by sites with radiocarbon dates about 30-28 000 BP.

The second wave of settlements can be attached to the characteristic, well-demonstrated interstadial phase that can be called, according to local nomenclatures, Stillfried B, Mende upper soil, or Ohaba. The upper cultural layer at Istallosko cave, the Pesko cave and the open air site of Bodrogkeresztur belong to this phase (VERTES 1966: 9). The latter site was on the top of a hill, called Mt. Henye situated at the junction of the rivers Tisza and Bodrog, the rim of the Eperjes-Tokaj Mountains facing the Great Hungarian plain. It is at the crossroads of different environmental niches and a center of raw material collecting places, obsidian included (Fig. 1).

The main game animals at this site were elk and horse. The chipped stone implements were made of various raw materials: End-scrapers and burins were found in great quantity; they were very carefully made on long blanks, although a microlithic technique also appears at the site.

Third phase is represented by sites with radiocarbon dates between 18 and 16 000 years. The overwhelming part of our open-air sites belongs to this period: Sagvar with its two occupation levels (GABORI - GABORI 1957: 6-8) Madaras (Fig. 2) (DOBOSI 1967: 187-188) and the settlements near Pilismarot (GABORI 1964: 54-60; DOBOSI 1981: 9-13; DOBOSI et al. 1983: 287-311) represent this horizon. These sites, situated in different parts of the country, far from each other, demonstrate that during this period of the Upper Paleolithic, groups of hunters populated the whole Carpathian Basin even if it was for a short time and only temporarily. Toward the cold peak of the Würm, the main game animals were herd animals like reindeer and horse. At Sagvar, the proportion of Rangifer exceeds 80%; the rest comprise horse. Thus, the quantity of meat derived from reindeer and from horse produced about the same amount of meat if we take into consideration the different size of these animals (VOROS 1982: 46).

The archeological materials of these sites always show some local features besides their general Upper Paleolithic character. These feature may be either the unusual proportion of some raw materials (e.g. Mogyorosbanya, 300 km from Tokaj-Eperjes Mts where the percentage of obsidian is high) the great quantity of exotic objects and for molluscs used as ornaments (DOBOSI 1985: 24), the high proportion of certain technological characteristics (e.g. the appearance of backed implements at Esztergom-Gyurgyalag) or even an extremely narrow typological range as is the case at the Pilisszanto I. rock-shelter (KORMOS 1915: 334). Exotic objects, rarely found at Upper Paleolithic sites (e.g. rock-crystal) indicate that see range of collecting and barter activity of these huntering communities was inscribed within a circle of about 250-300 km (DOBOSI 1986: 254).

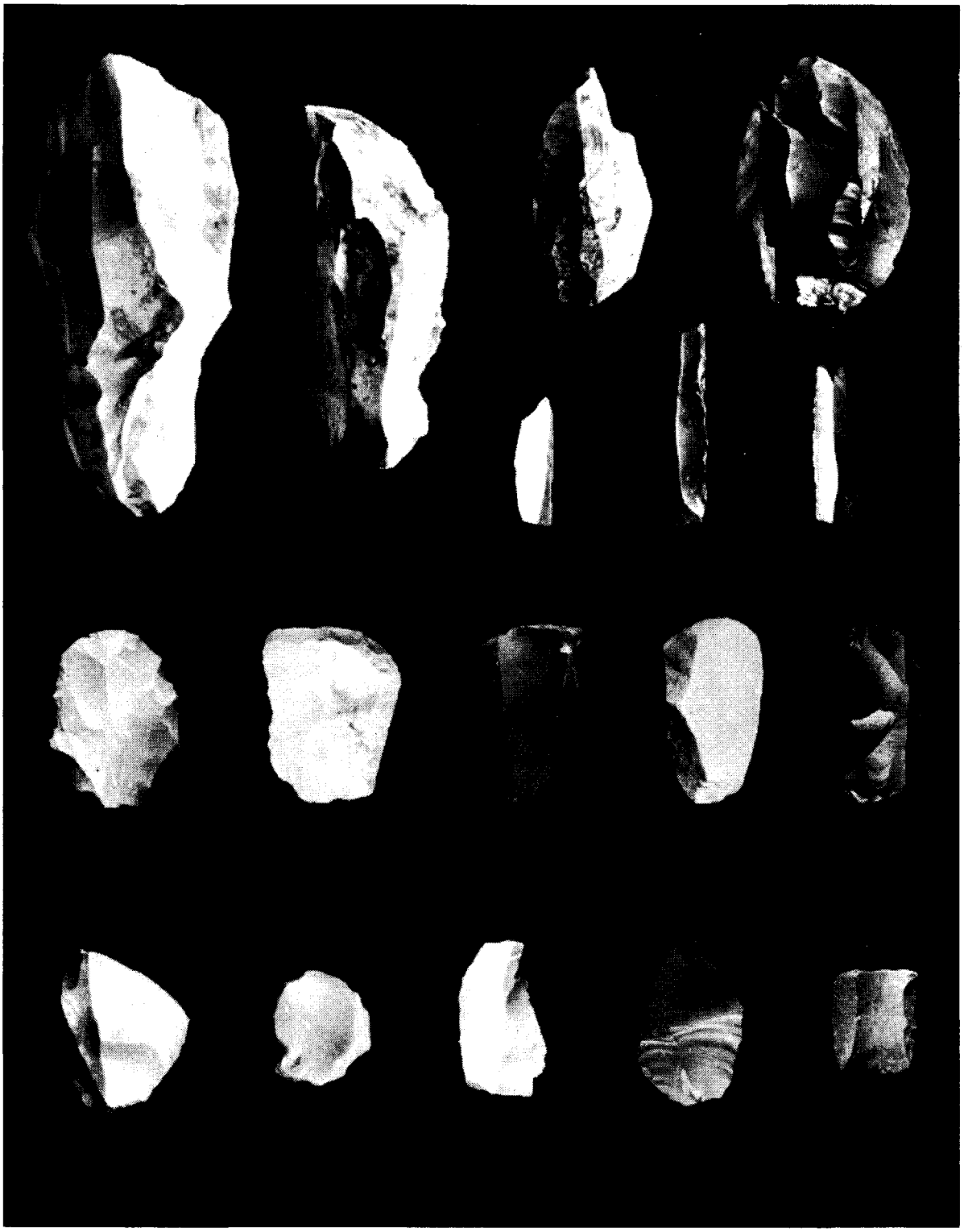

Fig. 1: artifacts from Bodrogkeresztur

Fig. 2: Artifacts from Nadap (top row) and Madaras (lower 2 rows).

Fourth wave was between 13-11 000 years, at the very end of the Würm. The culture of this period has still only vague outlines. The only radiocarbon date known from this horizon is yielded by the upper culture layer of the open air site of Arka (VERTES 1964/65: 102-103).

These archeologically well defined settlement waves coincide well with the interstadials which are represented in loess profiles by episodes of soil formation. This coincidence helped us to a great extent to recognize the periodical character of the Upper Paleolithic population all over the territory of present-day Hungary. The two groups of data corroborate each other: the C14 dates from the embryonic soils in the younger loess profiles (PECSI *et al.* 1977: 144) coincide with the chronological dates from archeological sites. And, soil formation processes, characteristic of the interstadials, can be traced also in the sediments of the occupation levels of Paleolithic sites. As in the loess profiles, the humus bands of different width are separated from each other by thick loess beds just as in the case of Upper Paleolithic settlements where archeologically sterile layers are found between the occupation levels.

The fact that in the second half of the Würm human occupation was discontinuous in the territory of Hungary explains the scarcity of sites, in spite of natural that conditions that were theoratically ideal. What is even more conspicuous: these sites are temporary camp sites. They were established by groups of hunters who temporarily occupied the most important places - prospecting points, fords or passes - along the migration routes of animals:

Sagvar is situated on the NE loess-covered rim of the Somogy hills toward the Balaton shore, as a more or less independent part of the Harshegy. Madaras is on the rim of the Telecska hills, in the small valley of the Kigyos brook.A series of sites are at the Danube bend.

Among the factor motivating the selection of settlement locations and apart from the supposed control over migrating herds of animals, an important element may be that the sites are situated "halfway" between the sources of Carpathian Radiolarite and the inner parts of the Carpathian Basin.

Home base type sites indicating permanent settlement are still unknown.

At present the discontinuities in the cultural history of the Hungarian Upper Paleolithic remain a working hypothesis. Several problems are waiting to be solved, there are contradictions and uncertainties in terminology. The hardest task is to determine the chronological position of settlements which are not typologically uniform and for which there is no absolute dates. And an further comparison of data is necessary because here we deal only with sites being in the territory of Hungary, whereas the whole Carpathian Basin forms a real ecological unit. During the Pleistocene the events of both natural and human history within the arch of the Carpathians were closely entwined with each other.

The theory of the discontinuous human settlement in the Pleistocene leads to another evident consequence, namely, those finds which come to light from the occupation levels of archeological sites as supplementary finds and give information on the natural environment, like botanical and charcoal finds, animal (game) remains, yield data to the reconstruction of the environment of only a restricted period. Therefore these finds represent the vegetation and fauna of only a small area and a short interval and they are always influenced by human selection. Consequently they are suitable for reconstructing only momentary conditions and not a whole course of events.

The knowledge of the whole series of events requires further fortunate finds and interdisciplinary research.

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