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DATA TO THE CHRONOLOGY OF THE LATE UPPER PALAEOLITHIC SETTLEMENT AT SÁGVÁR (A SHORT TYPO/STATISTICAL ANALYSIS OF THE TOOL ASSEMBLAGE)*

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* The publication of the full typological and statistical analysis of the Ságvár site is in progress. (Folia Arch., 46, 1997) This paper contains only the distribution of those tool types which I determined and composed on the basis of the 92-item list of classical French Upper Paleolithic tool types.

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During the Late Upper Palaeolithic Ságvár site, at a few kilometers from Lake Balaton to the South served as a winter campsite for groups of specialized reindeer hunters belonging to the Gravettian culture complex (GÁBORI 1959, 1964, 1965; GÁBORI & GÁBORI-CSÁNK 1957).

At the Ságvár settlement the inhabitants of the lower culture layer were succeeded after about 1200 years by a population with an industry which can be characterized by tool types similar to those used by the previous group but these types in the upper layer occur in a different typological distribution. Technologically however the industries of both culture layers belong to the same culture complex.

Though the archeological material of both layers contain several types their small quantity and the scarce settlement features refer to a settlement of short duration at the site for both culture layers. The distribution of animal bone material at the site suggests that after the game animals had been cut into pieces on the spot furs and meaty limbs were carried away (VÖRÖS 1982).

The composition of tool assemblages suggest that the activity of the inhabitants at the site had been changed somewhat comparing the lower and upper culture layers, that is in the lower culture layer scrapers and burins occur in almost the same proportion while in the upper culture layer the number of scrapers is more than twice as much as that of burins. There is a difference regarding the quantity of backed blades, too, that is they occur in considerably greater number in the lower culture layer than in the upper one.

Presumably the population of the lower culture layer was more involved into intensive hunting than the population of the upper one. Butchering and meat "processing" activity, related closely to hunting seems also more important in the lower layer than in the upper one.

On the basis of the great quantity of scrapers in the upper culture layer it is highly probable that at that time besides specialized hunting as basic activity the importance of hide processing, a more localized activity, had increased. Lithic tools were made of raw materials collected partly in the neighbourhood of the site, partly from distant areas, that is from the Bakony Mts., Eastern Hungary and even from the Vág valley. The technology of the industries of both culture layers can be characterized by the usage of pebbles as raw material (CSONGRÁDI-BALOGH 1984).

Typological and statistical analysis of the tool assemblage

After a thorough survey of the whole material of the excavations made at Ságvár (between 1928 and 1957) I examined alto-

gether 431 tools, several thousands of flakes and waste. Including broken blades as well relatively few, that is 453 blades could I determine beside several hundreds blade-like flakes.[1]

According to this survey 251 tools belong to the upper culture layer and 180 ones belong to the lower culture layer.

In the material originated from the excavations of 1930-32, 1935-37, 1941 and 1957-59 after a theoretical separation of pieces by the two culture layers I was able to determine the following types : see Table 1. (Fig. 1)

Table 1. The material of the two culture layers

Types:	Culture layers: upper pcs.	lower pcs.
A. Scraper/grattoir	118	69
B. Burin	41	62
C. Combined tool	12	2
D. Borer	12	1
E. Scraper/racloir	12	7
F. Pièce esquillée	6	1
G. Point	5	
H. Backed tool	22	33
I. Retouched-truncated tool	2	1
J. Truncated tool	2	
K. Notched tool	2	2
L. Hafted tool	4	
M. Shouldered tool	4	
N. Diverse	8	2
Altogether	**251**	**180**

Analysis of the material

Comparing the material from the two culture layers I was always aware of the fact that by now a considerable part of the material found the excavations cannot be separated by layers beyond doubt, therefore it is possible that the materials of the two layers had been confused with each other.

In both culture layers grattoirs and burins are dominant. At the same time proportion to each other within each culture layer is different. In the upper layer the proportion of grattoirs compared to that of burins is considerably higher while in the lower layer they occur in practically the same number. The number of backed microblades is great in both culture layers but in the lower one it is conspiciously high comparing to other types. Apart from the main types (scrapers, burins, backed microblades) other tool types are represented by only a few pieces.

Grattoir types are represented differently in the two culture layers. In the upper culture layers end scrapers (on blade) and flake scrapers are dominant and core scrapers appear also in considerable number. In the lower culture layer flake and core scrapers are dominant, the number of end scrapers (on blade) is few.

The manufacture of grattoirs in both culture layers is the same: the scraping edges of blades or of flakes were shaped by fan-like retouches and occassionally also small, marginal retouches were used. Scraping edges have several varieties in shape.

As for burins, too, the distribution of types is different in the two culture layers. In the upper culture layer angular, lateral, and shouldered burins are dominant,

[1] Statistical data contain those data which I got after surveying each piece of the whole material collected in the Archeological Collection of the Hungarian National Museum. In this tool assemblage originated from several excavations the material of the upper culture layer is represented by those excavations the material is denoted as originated from the upper culture layer beyond doubt, while the material of the lower culture layer is represented by the "remainder" material. Pieces cannot be connected to culture layers were not used for the statistical analysis.

middle burins form the next larger group and polyhedral types appear in less number. Other burin types appear here in very few number.

In the lower culture layer polyhedral burins appear in the greatest number, there are less lateral and angular types. Middle and core burins, as compared to the types mentioned before, appear in smaller quantity. In the upper culture layer there are only very few core burins while in the lower one they appear in a relatively great number.

Among burins in both culture layers more or less the same types are dominant only their distribution differs by layers. Considering form, types are dominant while burins made on retouched trunctions are very few. In the culture layers there are usually small and medium sized burins. They are made of flakes, blades, blade-like flakes, cores and other fragments.

Besides scrapers and burins it is the number of backed micro-blades which is significant in both culture layers. Among them there are micro-blades backed with tiny, steep retouches along one of their edges or along their both edges. Technologically there is no essential difference among the micro-blades of the two layers, at the same time their number is considerably greater in the lower layer than in the upper one.

In the upper culture layer the so-called "pièces esquillées" form a separate group. Though considering the whole assemblage their quantity is not very large they are very characteristic, standard pieces, made of small, quadrangular, bulky flakes.

Leaving out of consideration the above-mentioned types, other tool types appear in the upper culture layer only in a very small quantity. Apart from archaic racloirs only some combined tools, namely grattoir-burin and borer-grattoir combined tools are worth to mention and borers appear in greater quantity.

Blades are characteristic tools of both the upper and of the lower culture layers among which short, small pieces are dominant. The quantity of fragmentary blades is very large and the tools made of them are also fragmentary.

Comparing the blades of the two culture layers it is clear that the blades of the lower culture layer are more bulky, shorter and also narrower than the blades of the upper culture layer. This analysis comrised only intact pieces. In the upper culture layer there are 146 while in the lower culture layer there are 177 intact specimens. Both culture layers contain a large quantity of fragmentary, half-made blades and blade-like flakes.

On the majority of intact blades both base and bulb are present. Blades with dièdre base occur only sporadically. In some cases the margins of blades are sporadically retouched either on one side or along both sides.

The upper culture layer can be characterized first of all by the numerous grattoirs (made mostly on blades, flakes and cores), by the burins appearing in a smaller quantity (mostly dièdre types) and by several backed micro-blades. Beside pièces esquillées appearing in blade, too, appears. In the upper culture layer there is a dominant blade and blade like flake industry, though a definite tendecy for making flake and core tools is also present.

The industry of the lower culture layer can be characterized by the nearly identical quantity of grattoirs (made mostly on blades, flakes and cores) and of burins (mostly dièdre types) as well as by the presence of backed micro-blades in a surprisingly great quantity. Just as in the upper culture layer, here, too, besides the dominant blade and

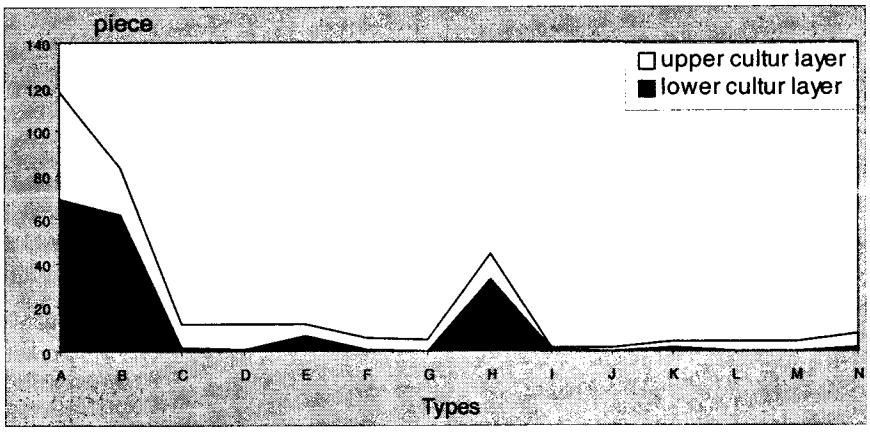

Fig. 1. Tool assemblage of the upper and lower culture layers

blade-like industry a merked tendency for making flake and core tools is present.

Chronology of the site

On the basis of the analysis of the industries of the two culture layers the population of both the lower and of the upper culture layer belongs presumably to the same culture, that is Sagvarian culture, representing the so-called "pebble-Gravettian", established recently by V. T. Dobosi (DOBOSI 1997).

Charcoal remains found at the site made possible to determine the absolute age of the site by radiocarbon method. The age of the lower culture layer: 18,600±150 BP (GrN 1783), while that of the upper culture layer: 17,400±100 BP (GrN 1959). (GÁBORI-CSÁNK 1978: 8).

As for the relative chronological position of the site: to so-called Ságvár-Lascaux minor interstadial (GÁBORI-CSÁNK 1978). According to a more recent approach the site belongs to the Pilisszántó climato-phauna phase which is within the Sagvarian stage, where it is between the two fossil soil complexes, namely Dunaújváros h_2 and Tápiósüly h_1.

The Ságvár site was inhabited over the two minor mild/humid interstadials and the cold/dry loess-formation period between them. (DOBOSI & VÖRÖS 1987: 58; DOBOSI 1997).

Archaologically the site belongs to the Hungarian Gravettian culture complex and within the hypothetical triple chronological and culture scheme of the Late Upper Palaeolithic (DOBOSI 1996) forms a both technologically and typologically well defined unit of the younger blade industry (Ságvár, Madaras, Mogyorósbánya) (DOBOSI 1989, 1992) while the use of pebble raw material gives the industries of both culture layers a peculiar local character.

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