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A NEW UPPER PALAEOLITHIC SITE AT MOGYORÓSBÁNYA

Topography

The stretch of the Danube between Nyergesújfalu and the quarry at Lázbérc, the entrance to the 'classic' Danube Bend, is a closed geomorphological unit. The unevenness of the surface caused by volcanic-tectonic activity was partly deepened by the varying water-output of the Danube and partly leveled by intensive loess formation during the Ice Age. The steeply rising terrace, which is sharply differentiated from the Holocene deposit of the Danube, can be followed along this stretch. The same formation continues further along the Danube between Lázbérc and Dömös. The leveled plateaus are proportioned by wash-outs, active streamlet valleys and dry gorges. All these come to the allovial deposit, which at places, may reach a breadth of several hundred metres and which separates the Pleistocene levels from the present Danube. The hills of Mogyorósbánya-Újfalu, with their uneven surfaces, run in an East-West direction. The site is not located on the northern edge of the terrace facing the Danube as the Pilismarót settlement series in a similar geomorphological position, but rather on the 'inner' edge of the loess plateau, facing the hills. In

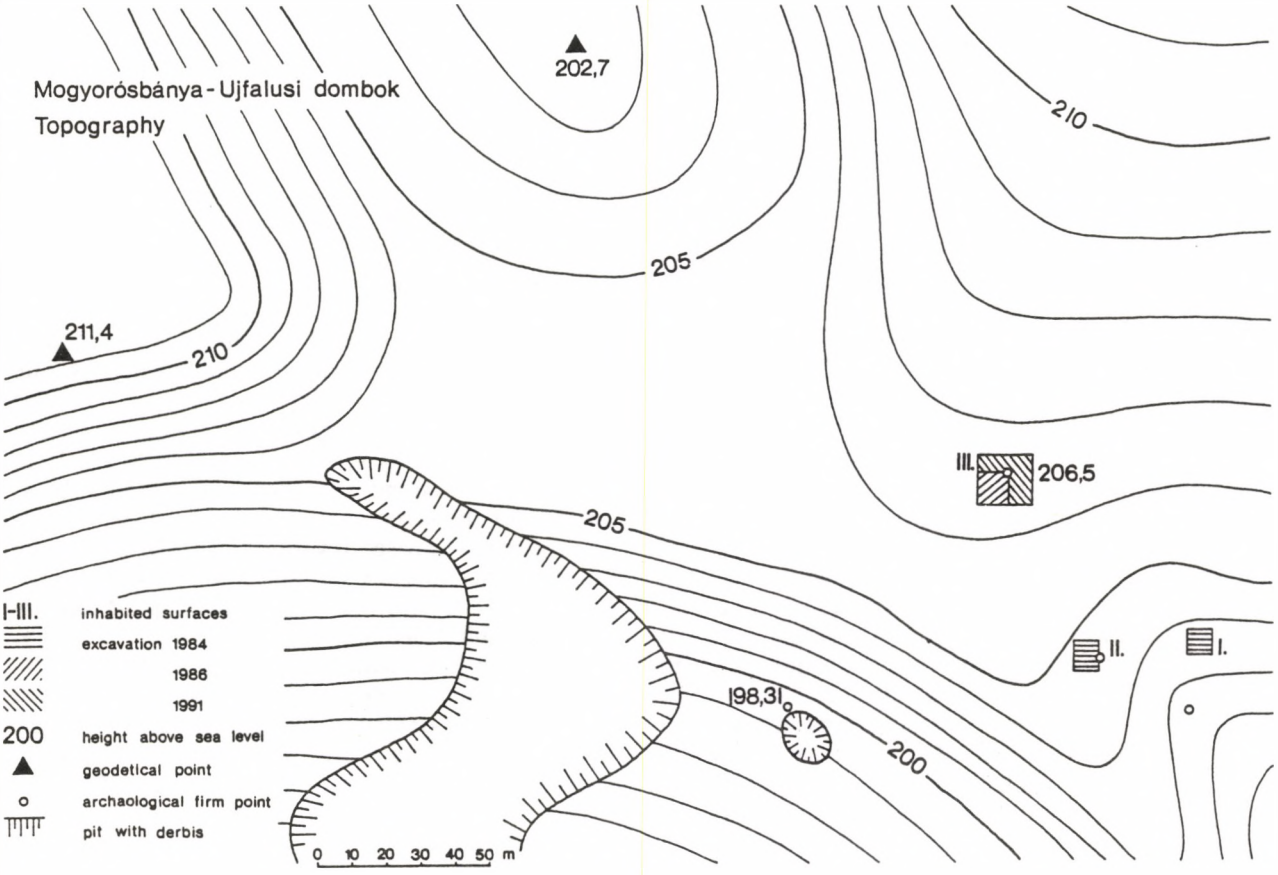

Fig. 1. Mogyorósbánya-Újfalusi dombok, topography of the three settlement spots

selecting the location of the palaeolithic settlement, it was not the supposed Danube shallows that was considered but rather another topographic factor: the settlement was founded on the terrace edge above the streamlet valley leading from the Gerecse to the Danube, or, more exactly, from the huge limestone wall hiding the Jankovich caves. This location of the settlement should direct further research and field survey in two directions:

- on the one hand, Palaeolithic settlements should be looked for on those slopes of the Újfalusi hills which face the Danube as observed at Pilismarót;
- on the other hand, with regard to the significance of the 'inner road' at Mogyorósbánya, the inner road at Pilismarót, that is the terrace edges facing the Bitóci valley, an active streamlet valley should also be examined.

History of research

The stone implements were found by István Homola on the slope running towards the village during regular field walks in 1982–83. An excavation was planned because of the denseness of the surface traces.

In May, 1984, two settlement spots were unearthed within the excavated 145 m^2 area; spot I covered 40 m^2, while spot II spread over 30 m^2 and lay 25 m West of the former. This second spot marked the real site. Regrettably, only about 2/3 of it was undamaged. Towards the edge of the terrace the culture bearing layer thinned out, appeared on the surface. Thus, the find material, which was later collected from the surface, was scattered by the plough.

1986: repeated field walks demonstrated that there was at least on more settlement spot about 40–45 m North-Nortwest of the excavated sites at approximately the same height a.s.l., only a metre higher (Fig. 1). In this year, 104 m^2 was unearthed. The finds were concentrated on the Eastern side of the oblongshaped section. On the Western side, the settlement spot is not sharply contoured. The find became scarce and the surface turned barren.

1991: after a long pause due to agricultural cultivation features, the excavations aimed at the recovery of settlement spot III. Fifty-seven m^2 was unearthed lying contiguous with the Northern and Eastern sides of the area excavated in 1986. So together with the empty zone on the Western border of the living area in settlement III, 176 m^2 was unearthed. The Eastern border of the living area was not found in this year. Further excavations are needed to uncover the whole surface and some trial trenches are necessary to check if there are other settlement spots on the top of the hill. All three settlements have a single component. The living surface is slightly oval with an irregular contour. These settlements represent temporary hunters' camps occupied just once and yielding poor fanual material. At the border of the last excavation section half a hearth was uncovered.

Stratigraphy (Fig. 2)

From the surface downwards: a 25–30 cm thick, slightly humousy, light upper soil with traces of

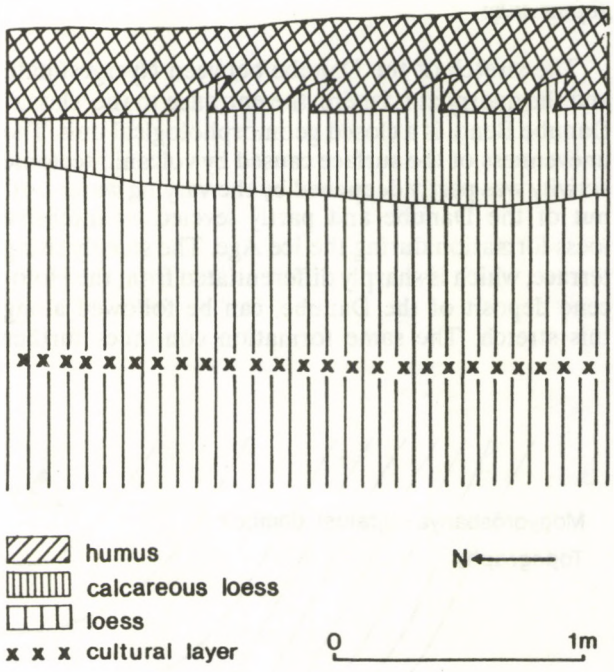

Fig. 2. Mogyorósbánya, spot III, section V, layer series

ploughing followed by a 25–30 cm thick sandy loess and then a typical loess layer to unknown depths. The depth of the culture bearing layer is not constant. The terrace edge surface slopes towards valley/the village and the relief energy grew as compared to the Late Pleistocene: the slope is steeper than it used to be at the time of the settlement. The depth of the culture bearing layer decreases towards the edge of the terrace and then it narrows out. Usually, it can be found with a depth of 60 to 100 cm. It is made up of slightly humousy embrional soil with lime micelia. The dry, limey, sandy loess with loess conglomerates underlying the humus is not present in all the sections. Settlement spot III is situated higher, closer to the hilltop and devastation is stronger: the culture bearing layer appears as high as 50 to 60 cm in the profile.

Settlement features

The hearths were constructed on the surface and attest to shorter term use: ash, smeared and scattered

charcoal fragments, only slightly burnt loess. The cross-section of the hearth is trough-shaped. At its centre, it is cca 10 cm deep. The only preparation for the hearth must have been deposition of the uppermost, loosest surface soil. The contour of the burnt spots with ash is not sharp. The uneven distribution of a free fire can be observed. The animal bones are concentrated around the hearth. Ochre, apart from scattered grains, occurs in concentrations. Some greater ochre lumps, soaked by moisture and capillary action of the soil, coloured the surroundings: the ochre colouring could be onserved 10 cm above and also below the culture bearing layer as a faint spot with dim outlines.

The inbedding of the stone artefacts suggest that during the short duration of the habitation, the surface was loosely packed. Beside the troughshape of the hearth, the loose soil is reflected in finds lying in various positions, horizontally, slightly slantwise or even vertically. The lower surface of the stone artefacts display a thick, strong limey incrustation. Experience has shown that this patination is caused by swift cooling and an abrupt change in temperature. That is, the loose lime dissolved in the soil freezes on the surface of the stone artefacts which cool faster and harder than their surroundings. These temperature conditions suggested by the incrustations are contradicted, to a certain degree, by the fact that the culture bearing layer displays a soil formation characteristic of mild interstadials. It means that the humus content of the loess increases and the soil is interwoven by lime micelia. It is, however, possible that the temperature alteration between seasons was sufficient to create the two contrary features, both dependant on temperature.

The surface was not cleaned twice because of the exceptional richess of the culture bearing layer but for technical reasons. The single culture bearing layer is about 10 cm thick and the objects do not stay put on high loess balusters since the loose loess quickly dries and falls apart.

The drawings of the two levels together render the final and actual surface.

Small spots containing ash occur scattered in spot I. The great central hearth is missing. The fractured animal bones become denser towards the border of the settlement spot. Sometimes they are slightly burnt and in poor condition.

In settlement spot II, there was an ember-pit at the border of squares 1 and 2 in section M. On the surface it was not marked by a sharp outline. In cross-section, it was 35 cm in diametre and 15 cm deep. It was oval, trough-shaped and filled with burnt earth containing charcoal as well as hard calcinated bone fragments. The undisturbed part of the living surface was slightly oval with the finds occurring more densely towards the slope where the layer narrowed out. The hearth was in about the middle of the living surface surrounded by fractured animal bones, typical 'fire-feast-remains'. Beside the great, central hearth of nearly 1 m^2, the only other feature that should be mentioned from settlement spot II is the ember-pit.

Settlement spot III is the greatest in size. If the hearth found during the 1991 excavation season is centrally located, this spot should be especially large. Some of the material from the culture bearing layer was levigated. Micro- and malacofauna was collected from it. On the surface plan the depth of the artefacts, measured from a theoretical horizontal line above the layer, was also indicated in the hope that sometime later a three-dimensional reconstruction of the living surface by a computer can be carried out.

Settlement structure

Of all the Hungarian open-air Upper Palaeolithic sites, Mogyorósbánya is unique in regard to the three connected living surfaces separated by archaeologically sterile patches. The approximately contemporary sites (seem to be related through ecological situation, technical-typological traditions and way of life, which is traditionally termed Eastern Gravettian), may be placed within the following groups on the basis of settlement structure observations:

- sites that were uncovered by authenticated excavations are still fragmentary or only partially excavated for various reasons: Zalaegerszeg, Villány, Dunaföldvár, Szeged-Öthalom (BANNER 1936, 4–5), Madaras (DOBOSI 1989, 47), Nadap (DOBOSI et al. 1988, 20), Tarcal (DOBOSI 1975, 9), Budapest-Csillaghegy (GÁBORI–CSÁNK 1984b, 7–14), Dömös (GÁBORI–CSÁNK 1984, 251), Esztergom-Gyurgyalag (DOBOSI–KÖVECSES–VARGA 1991, 233). Reason may include great depth, modern constructions blocking the area and disturbances by industrial activity. These sites, however, offer possibilities for partial observation: At Madaras, the system of the hearth, at Dömös, the basis of the tent, while at Budapest-Csillaghegy a post hole could be observed. Due to partial excavation, however, the relation of the living surfaces to each other could not be determined,
- with larger sites unearthed over several seasons, the ground plans were not always exact enough to be assembled mainly due to problems with older excavation documentation.

The situation at Ságvár was a lucky one. During the excavations started in 1957, M. Gábori unearthed two settlement features. The tent bases lay about 15–17 m from each other in a North-South direction. The excavators found a hearth and post holes in the filling of the pit coloured by charcoal grains and ochre fragments. The contents had a different structure than the surrounding soil (GÁBORI 1959, 13–15; GÁBORI 1965, 115–117).

Excavations at Pilismarót covered a greater area and several settlement spots. Concerning the structu-

re of the classic Öregek dülö settlement, Gábori wrote the following: "... The culture bearing layer was located in scattered spots of various sizes. ... The areas of the culture bearing layer are often at a significant distance from each other ..." (GÁBORI 1964, 54). The several excavations made at various times and with various methods, the rescue excavation and Palaeolithic finds recovered as stray finds from other excavations do not allow the reconstruction of the settlement structure and it cannot be determined how large the "significant distance" mentioned by Gábori might be.

The above is valid for other sites at Pilismarót too, Tetvestető was excavated in 1980–81 and 1987–88, just above the road leading to the Szob ferry. This was the site which gave the impetus, though indirectly, to the revival of Palaeolithic research around Pilismarót. In the course of rescue excavations preceding the construction of the Bös–Nagymaros water dam, Ferenc Losits opened several research trenches with the aim of finding the site located here during the Archaeological Topography. According to the map and an oral communication by István Horváth, the site called, mistakenly, Pilismarót-Bitóc hill in the Archaeological Topography of Hungary must be identical to this spot (HORVÁTH 1979, 29). Tetvestető is a cca 200 × 250 m large plateau with an almost regular oblong shape which is divided from other parts of the terrace edge by two dry valleys on the Northwest and the Southeast. Its shorter side, running Northwest-Southeast, falls steeply to the Holocene terrace of the Danube along the Budapest–Esztergom road. After Losits's fruitless efforts, the Pilismarót-Diós site was unearthed on the upper part of the gorge called Diós-torok, on the Southeastern area of the hilltop, in 1980–81 (DOBOSI 1981, 9–27). Tetves-tető was probed in 1987–88. Then it was found that the settlement pattern repeated that found at Öregek dülő: All trial trenches contained finds even if in scattered culture bearing layers. There were two find concentrations, which can be called living surfaces, at about the centre of the hilltop and on the site of Diós. The two surfaces were about 80–100 m from each other in East-West direction and approximately parallelly to the terrace edge.

The next step in research on the stretch of the Danube between Pilismarót and Esztergom was the examination of the Bitóc hilltop, where observations demonstrated the existence of the same settlement system. None of the trial trenches proved empty and a definite as well as possible find concentration were detected. At the least, the bone and flint splinters found in the trenches indicated the one-time Pleistocene surface. There are no definite proofs for the contemporaneity of the several settlement spots found on the terrace between Pilismarót Öregek dülő and Basaharc, although it can be supposed. The deep or shallow, dry and active streamlet valleys, which proportioned the terrace edge in the Holocene, seem to isolate these settlements from each other. The three unearthed settlement spots known to date at Mogyorósbánya and a fourth possible one delineate a unified, homogenous settlement structure.

Regarding the larger Upper Palaeolithic excavations, only Ságvár is relevant to this new site.

At Bodrogkeresztúr, repeated deep ploughing disturbed the surface to such a degree that only the following could be said during the excavations: At around the surveyor's point on the top of the Henye hill, settlement features were noted in a circle with a diametre of cca 300 m. The excavations revealed only two spots with light find concentrations (VÉRTES 1966, 3–14; DOBOSI 1983, 8).

The single living surface unearthed at Esztergom-Gyurgyalag was a traditional, seasonal settlement which was topographically open to the North-East. The location of the settlement, the poor faunal material, the richess in shell-jewellery and the incomplete list of types give a special character to the settlement (DOBOSI–KÖVECSES-VARGA 1991, 254–255).

No organic material has survived at Hidasnémeti and Arka, due to the unfavourable fossilisation circumstance characteristic of the Northeastern parts of Hungary. The excavators, however, assume the existence of some kinds of living structures from the ring-shaped arrangement of the flakes and implements: at Hidasnémeti the colouring of the soil and the post hole suggest that "...there used to be some kind of construction of wood and bone over the settlement that later burnt down..." (SIMÁN 1989, 7).

Vértes came to the following conclusion from the slight colouring of the soil and the arrangement of the artefacts at Arka, also lacking in organic remains. On the surface of 120 m^2 unearthed between two ravines "...fanden dabei Wohnplätze mit seichten Gruben und neben ihnen Schlagplätze..." (VÉRTES 1964/65, 79).

In the case of Arka, in addition to the fragmentary character of the find material, the identification of a possible settlement structure was further hampered by heavy Holocene destruction: the active ravines deepened the level of the trenches under the culture bearing layer, while, at the same time, the naturally fractured material of the raw material outcrops disturb the identification of the features of the settlement itself.

At Mogyorósbánya, the excavated three, probably contemporary settlement spots must have been the habitation for three basic/nuclear families or for three collaborating hunters' teams from a single community.

Without giving too much importance to these data or trying to compare the significance of the Hungarian settlements with that of the mammoth hunters in the Ukraine, the fact that the mammoth hunter communities of the 16th millenium, located within a 100 km circle in the central basin of the Dnieper, were arranged in fours, seems to hint at the existence of a common basic culture and common cultural/structu-

ral traditions. The best example may be the village at Mezin (SOVKOPLJAS, I. G. s sketch, BIBIKOV 1981, Fig. 4).

The settlements are aligned according to the cardinal points being open to the South. It is only generalization that North-Western winds dominated during the cold periods of the Ice Age. Regarding the duration of a seasonal settlement they may not be of defining value. Most of the settlements, however, were located on the Southeastern slopes protected by smaller unevennesses or higher points of the direct vicinity (Pálrét, Diós, Mogyorósbánya, Bodrogkeresztúr).

Exotic objects

Beside the relatively evenly scattered ornament shells and the ochre concentration in a small area of the living surface, two more objects should be mentioned, both from living surface III: an amber piece from square 8 in section 'S' and the ornament shells probably from a single necklace (?) found in square 14 in section 'V'. In this latter case, however, the method of fixing or stringing could not be ascertained (Fig. 3). O. Soffer has examined occurrences of similar objects on sites of the Central Russian Plain. She found that both sorts of object could be found in permanent settlements. Amber is more frequent (mostly in processed form) in the South, While ornament shells are mostly met with in the Northern zone. The manner in which they were procured is also different (SOFFER 1985, 438–442).

Although several criteria for a base camp listed by Soffer can be found in Hungarian sites (ochre, amber, ornament shells, grinding stones), the basic features, the lasting edifices of a winter camp and storage pits are as yet missing. Thus, the present data are insufficient to identify any of our settlements as a real

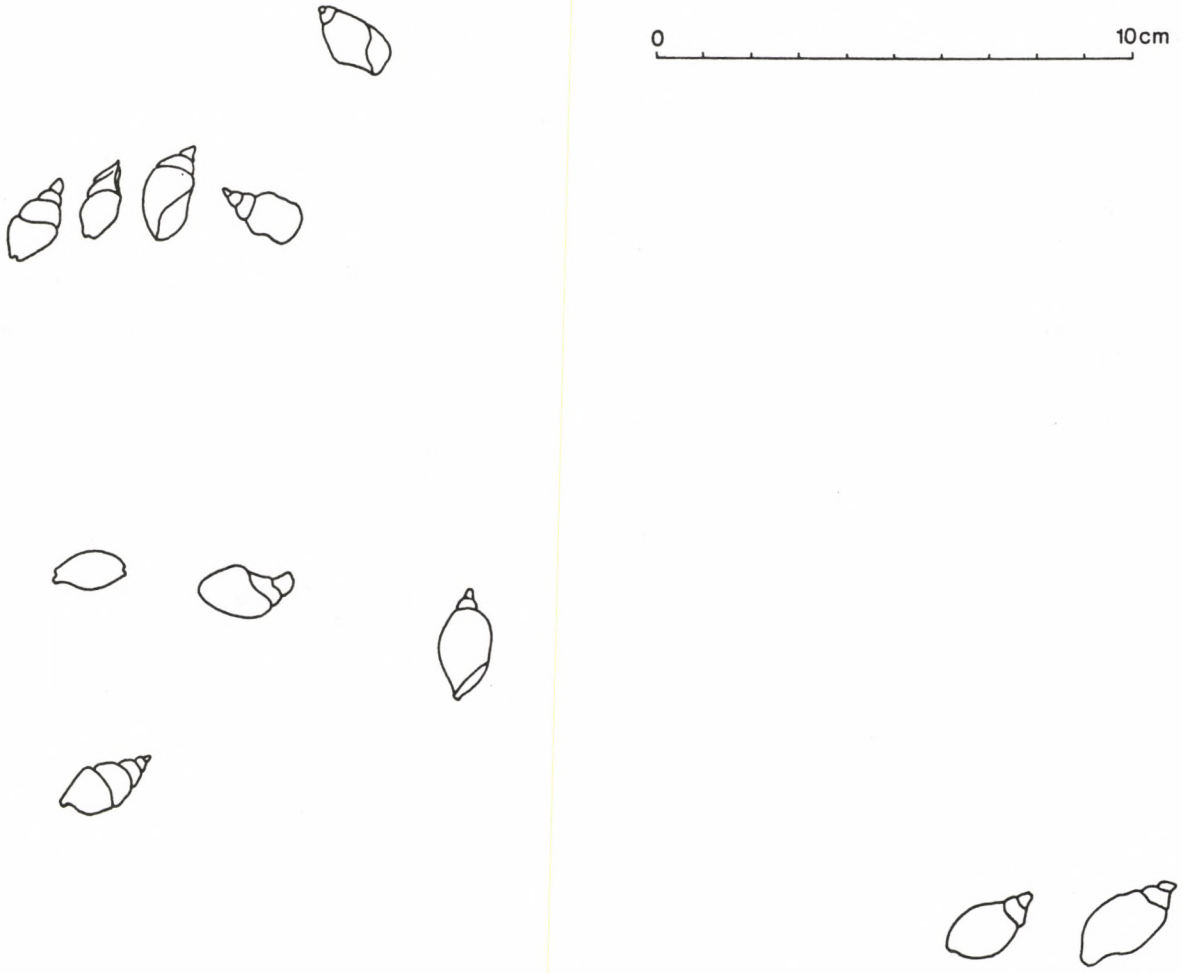

Fig. 3. Mogyorósbánya, ornament shells in square 14.

permanent camp. The presence of amber and ornament shells on satellite sites contrasts with observations made in the Ukraine.

Amber has been found at two sites: Pilismarót (Pálrét) and Mogyorósbánya. At Pálrét, traces of processing could be detected while the piece from Mogyorósbánya is amorphous. Processed amber has been unearthed in significant numbers, although proportion grows smaller with distance from sources around Kiev or at sites in Central Russia (SOFFER 1985, 438). The infrared spectre of the Hungarian amber finds is not sufficient to identify the geological source. The divergence from the commonly known Baltic ambers is significant both in the case of the succinit from Pilismarót and the Mogyorósbánya object (FÖLDVÁRI 1985, 39–40, and FÖLDVÁRI in the appendix).

Concerning the ornament shells, O. Soffer has reconstructed a collection area surpassing the annual range of the given population, not as in the case of amber. Thus, their acquisition was rather a result of repeated exchanges and not direct collection. In the northern zone of her study area, the base camps organized the collecting tours and a brought the ornament shells to the settlements where they were locally transformed into ornaments (SOFFER 1985, 440–442).

This model seems to be applicable to Hungarian sites with ornament shell occurences as well, since most are unprocessed. A chance discovery related to organised collecting tours may be the Szob find (GÁBORI 1969). Even supposing that the well-known, classic fossil mollusc sites in the Danube Bend were the primary sources in the Palaeolithic (as suggested by Szob), some tendency can still be observed in the frequency of occurences: there are many items in the direct vicinity of the sources (Pilismarót sites and mainly Esztergom-Gyurgyalag, where there were several pieces per square metre) and fewer and fewer as distance from the sources increases. At Jászfelsőszentgyörgy (cca 80 km from the sources) there were a few, at Ságvár yet fewer (cca 120 km), while at Tarcal (cca 200 km) only two pieces were found. The theory is alluring, still there is no evidence that, for example, the Ságvár and the Tarcal shells would have come from the Danube Bend. Furthermore, none of the settlements have been totally unearthed, so the number of ornament shells may still grow.

Archaeological material (Fig. 4–5)

In the following, the preliminary analysis of the stone artefacts from three seasons of excavation will be given.

It should be mentioned in advance that the types upon which Sonnewille-Bordes–Perrot built their comparative system are far from being identical with those found in Hungary. Nevertheless, as no better classification exists, the tools will be groupped according to their list (Table I). Apart from the basic morphological divergences in the features of the types, some alterations had to be made in the classic systematisation as well. Such an important tool group, and one that defined the character of the industry, as the geometrically broken pebbles and Middle Palaeolithic type pebble tools, had to be placed in category 92, divers. Flakes and waste are also neglected by the classic Western European type lists. It may be added that the enormous quantitative data of the Russian-Ukraine sites result from counting all the pieces. So, for example, in Kostionki IV there are 212 endscrapers and 158 burins in the sample of cca 60 thousand (!) specimens (ROGACHEV 1955, 120). Of the 6561 pieces from Amvrosievka, 4300 do not appear in the type list (KROTOVA 1990, 86). The divergences in the method of analysis will thwart any comparison between the find materials from the two territories.

The non-standardised tool category should be revised in the field of the Upper Palaeolithic. It is the very non-standardised feature that hinders cultural grouping, although they may comprise a significant share of the tool assemblage. An excellent example if the category of non-processed blades: the always present, multipurpose, handy "penknife" (a term by F. Bordes).

The analysis of a quantitatively large enough sample of medium-sized (ranging between 30 to 40 mm) unprocessed flakes suggest that even these usually neglected artefacts might have had functions similar to those of the recognized tools. After careful examination and backed by wear analyses, it can be shown on a series of objects that they not only served as ad hoc tools but also that making use of the natural flaking characteristics of the raw material, they were deliberately shaped tools (DOBOSI–HOMOLA 1989, 49–50).

Attention should be paid to the pebble tools, the proportion of which is strikingly high at Mogyorósbánya. The 'pebble Gravettian' feature of sites belonging to the older interstadial of the Ságvár period is due, in addition to the fragmentary nature of the raw material and the great quantity of the pebble used for tools, to the great number of these implements.

The distribution of the raw material (Table II) will not necessarily reflect this aspect, since the ratio of quartzite is not high. Nevertheless, most of the flint making up 86% of the whole appears primarily in the form of pebbles from Danube deposit.

Some informative comparative data have been collected from the tool assemblages from a few major and available excavation materials. The Hungarian sites are listed in chronological order (Table III).

- Bodrogkeresztúr-Henye (VÉRTES 1964 and the unpublished material from Dobosi's excavations in 1982)
- Mogyorósbánya-Újfalusi dombok (three seasons)
- Esztergom-Gyurgyalag (DOBOSI–KÖVECSES-VARGA 1991, 239)

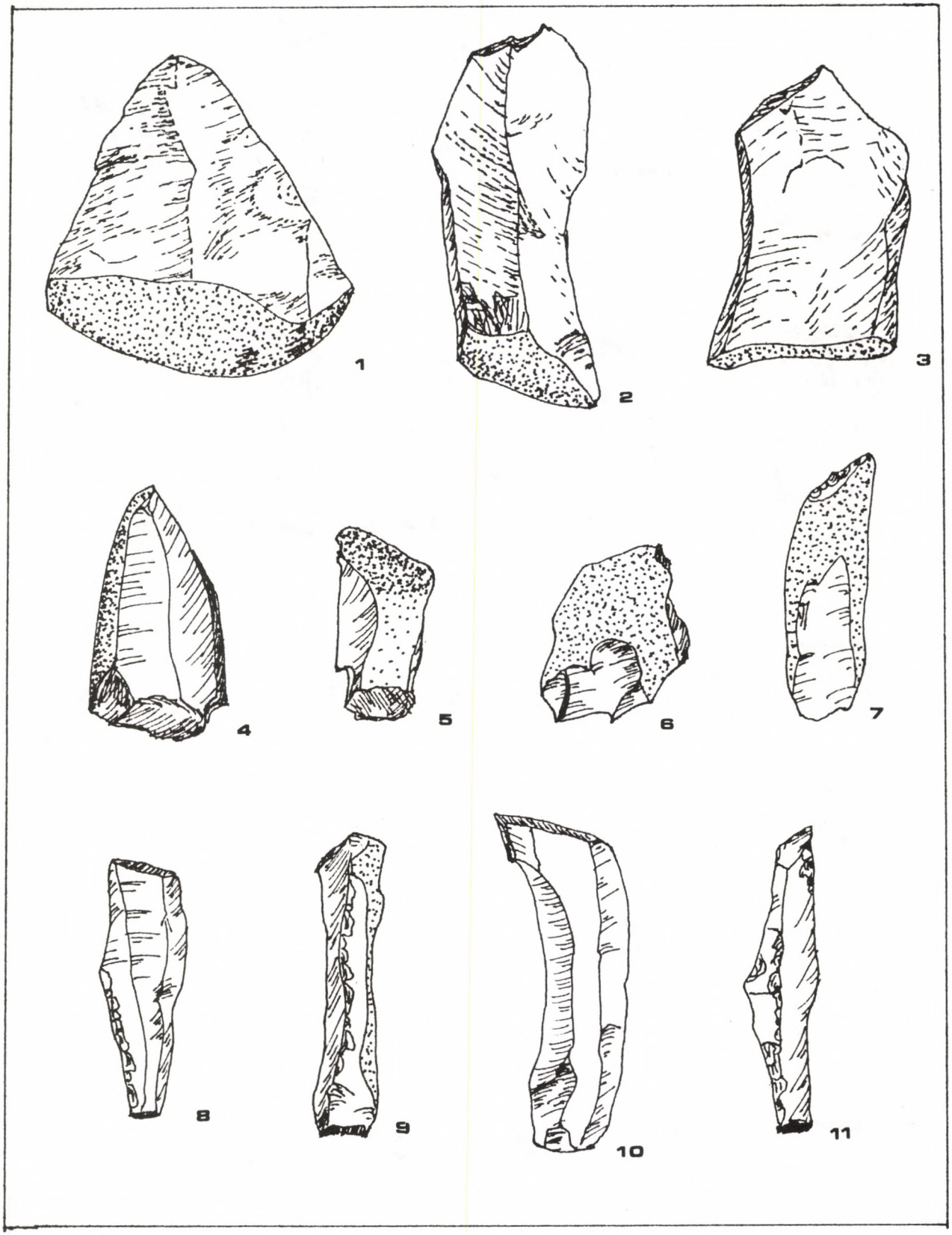

Fig. 4. Mogyorósbánya, pebble tools and processed blades. 1:1

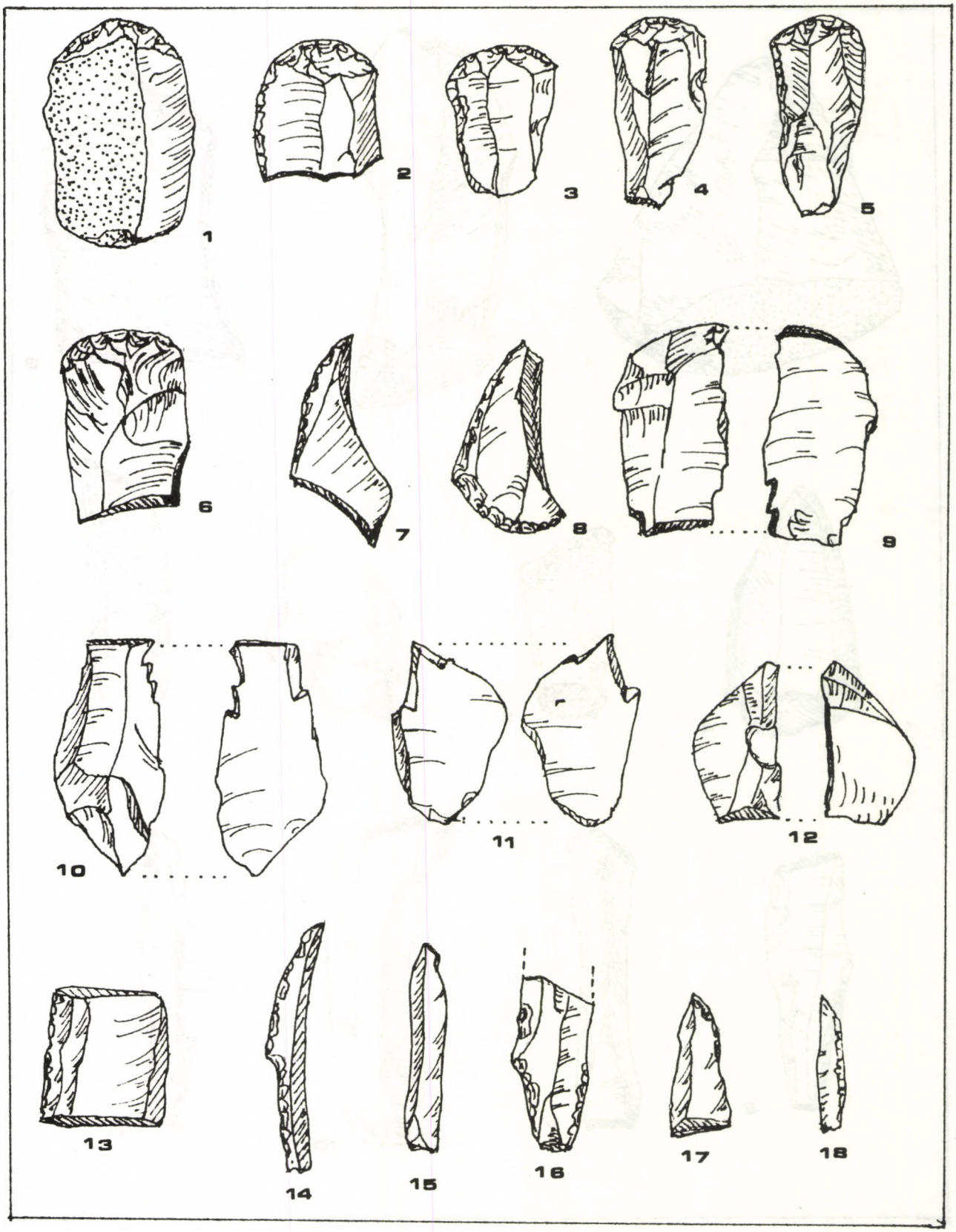

Fig. 5. Mogyorósbánya, end-scrapers, burins, backed blades. 1:1

- Dolni Vestonice (KLIMA 1963, 278–376)
- Grubgraben (MONTET-WHITE 1990, 155)
- Kadar (MONTET-WHITE 1986, 59)

The picture is rather heterogenous. Only a few similarities can be observed. The lack of bifacial tools and the ratio of Middle Palaeolithic side-scrapers does not surpass 10%. The results are, thus, rather negative. In this grouping, the data do not reflect either contemporary contacts or those of their origin. Montet-White's observation on microliths cannot be supported either. She thinks that at the Western border of the Central European Basin (although the Carpathian Basin should not be included here in a strictly geographical sense) microliths were characteristic of Gravettian sites in broader sense "within a limited time period around 17,000" (MONTET-WHITE 1990, 152).

Summary

The significance of the Mogyorósbánya Upper Palaeolithic site can be summed up, at present, with the following:

- it provided an opportunity to more exactly reconstruct the settlement structure of seasonal hunters' camps;
- an answer can be given to the question as to why a certain spot was chosen from among topographically identical places;
- the authenticated occurrence of Middle Palaeolithic type pebble tools in the archaeological material of an Upper Palaeolithic site;
- obsidian occurs regularly although it may not mean direct contact with the geological sources;
- settlements of the older interstadial of the middle settlement wave of the Gravettian period (Ságvár period) (Ságvár lower, Madaras, Mogyorósbánya) seem to delineate a special cultural level with their preference for pebble raw materials, the so-called 'pebble Gravettian'; (Why these poorer quality tool materials are prefered to the relatively easily available good quality raw materials is another problem. That is, did a change in the way of life initiated by the amelioration of the ecological circumstances trigger the alteriation of the tool assemblage?);
- based on the open-air analogues to the tool assemblages called cave Gravettian by Vértes, it can be said that the Late Ice Age layer of the caves in Pilis and the open-air sites on the Danube Bend yielded find material from the same culture. Differences are ascribed to the varying functions of the settlements;
- a seemingly coherent series of ornament shells and the amber piece represent exotic objects;
- the charcoal sample collected from the hearths in the settlement proved sufficient for a radiocarbon dating.

We have the intention to carry on the excavations at the site. The detailed analysis of the archaeological material will follow the end of the field work.

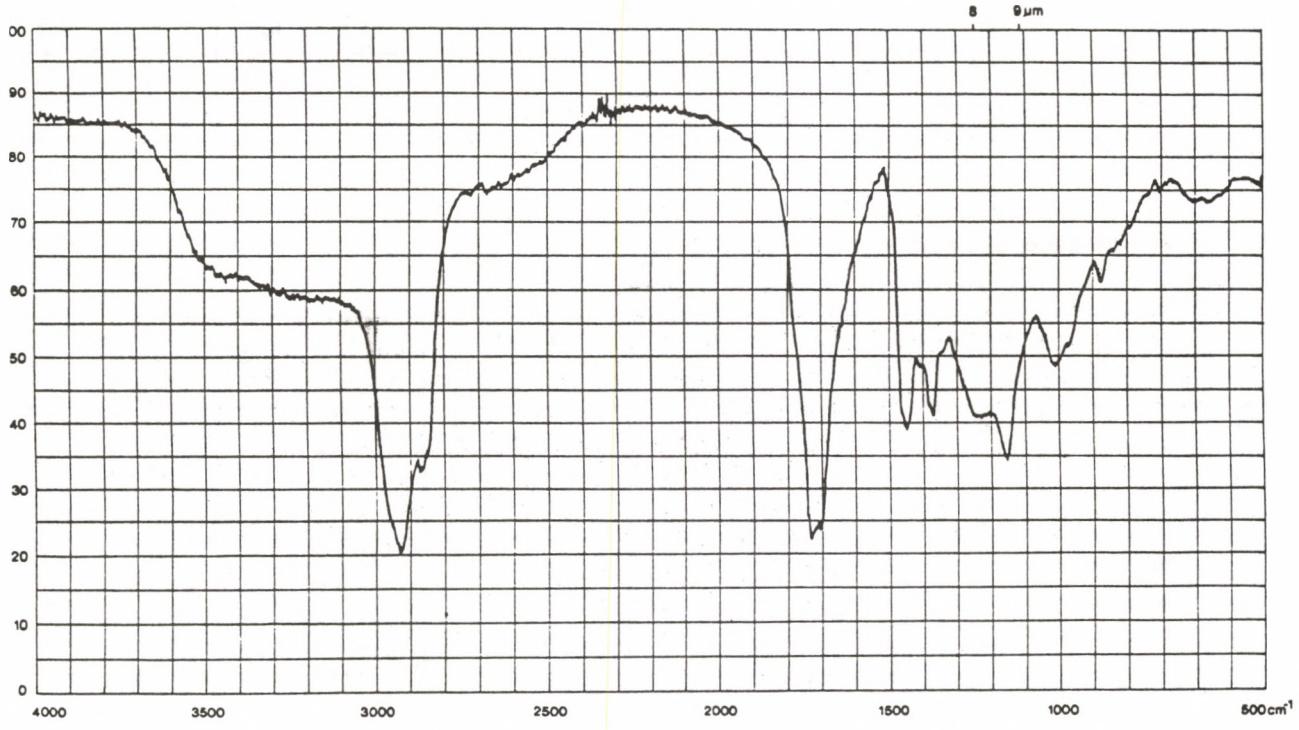

Fig. 6. Infrared spectre of the amber from Mogyorósbánya

Table I. Type distribution of the tools according to Sonneville-Bordes and Perrot.

Types	surface		I. spot		II. spot		III. spot		Total	
	N	%	N	%	N	%	N	%	N	%
1–15	2	1	19	1,3	10	1,0	22	0,9	53	1,0
17	2	1	1	0,1	4	0,4	4	0,16	11	0,2
16	2	1	1	0,5	8	0,8	12	0,5	29	0,5
23			4	0,3	1	0,1	2	0,08	7	0,01
27–44	14	6,8	53	3,8	26	2,7	55	2,2	148	2,9
45–52			2	0,1	5	0,5	3	0,12	10	0,2
57					3	0,3	5	0,2	8	0,1
58–59	1	0,5	3	0,2	5	0,5	1	0,04	10	0,2
60–63	1	0,5	4	0,3	3	0,3	8	0,3	16	0,3
65–68			17	1,2	22	2,2	39	1,6	78	1,5
77	8	3,9	9	0,6	4	0,4	6	0,2	27	0,5
pebble tools	8	3,9	5	0,4	2	0,2	25	1,0	40	0,8
slices	4	2	17	1,2	13	1,3	48	1,9	82	1,6
choppers	4	2	3	0,2	1	0,1	15	0,6	23	0,4
ret. flakes			33	2,3	14	1,4	26	1,0	73	1,4
nucleus	8	3,9	17	1,2	12	1,2	56	2,3	93	1,8
blades	10	4,8	69	4,9	41	4,2	136	5,5	256	5,0
flakes	141	68,7	1145	81,1	802	81,9	2015	81	4103	80,7
hand-axe							1	0,04	1	0,02
others			4	0,2	3	0,3	9	0,3	16	0,3
	205		1412		979		2488		5084	

Table II. Raw material distribution.

Raw material	surface		I. spot		II. spot		III. spot		Total	
	N	%	N	%	N	%	N	%	N	%
silex	192	93,6	1177	83,4	759	77,5	2221	89,3	4349	85,5
quartzite	8	3,9	143	10,1	120	12,3	184	7,4	455	8,9
hidroquartzite	3	1,5	26	1,8	9	1	26	1	64	1,3
obsidian	2	1	66	4,7	91	9,2	42	1,7	201	4
others							15	0,6	15	0,3
	205		1412		979		2488		5084	

Table III. Comparison of the type distribution from some major sites.

Types	Bodrogkeresztúr-Henye		Mogyorós-bánya		Esztergom-Gyurgyalag		Dolni Vestonice		Grubgraben		Kadar	
	N	%	N	%	N	%	N	%	N	%	N	%
1–16	163	18,2	82	13,3	2	0,5	74	11,7	90	31,6	91	9,1
17–19	30	3,4	11	1,8	2	0,5	27	4,3	4	1,4	11	1
21–26	15	1,7	7	1,1	9	2,2	21	3,3	7	2,5	10	1
27–44	254	28,4	148	24,0	56	13,5	195	30,9	62	21,8	50	5
45–56	35	3,9	–	–	30	7,2	81	12,8	35	12,3	283	28,1
57–58 +ret.flake	265	29,8	175	28,4	294	70,8	69	10,9	17	6,0	205	20,3
70–73 bifac.	–		–		–		–		–		–	
79–81	20	2,2	20	3,2	2	0,5	77	12,2	48	16,9	288	28,6
69, 74–78	65	7,3	27	4,4	9	2,2	69	10,9	21	7,4	68	6,8
archaic types	45	5,0	146	23,7	11	2,6	19	3,0	+			
	894		616		415		632		284		1006	

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RADIOCARBON DATING OF THE UPPER PALAEOLITHIC SITE AT MOGYORÓSBÁNYA

The analysis was made on charcoal collected from the culture bearing layer of the Upper Palaeolithic settlement during the excavations in 1984, in the laboratory of the Nuclear Research Institute in Debrecen. For the detailed description of the method see: Radiocarbon dating of a wood sample from an excavation near Esztergom-Gyurgyalag. Acta ArchHung 43 (1991) 271.

The results of the analysis:

lab code	site	$\delta^{13}C$[‰]DB	conventional radiocarbon age years BP
Deb-1169	Mogyorós-bánya Újfalusi dombok	–24.62	19 930 ± 300

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ANALYSIS OF THE AMBER FROM MOGYORÓSBÁNYA

The Infrared spectre of the amber found in the culture bearing layer of settlement spot 3. during excavations in 1986, reveals the following (Fig.6): The spectre behaves in the critical range described for the criteria for Baltic amber and so is different from the succinit from Pálrét (FÖLDVÁRI 1985, 40). From samples analysed to date, the Mogyorósbánya piece seems most to resemble the pattern of modern orna-