Le Paléolithique supérieur européen. Bilan quinquennal 2001-2006, Commission VIII
XVe Congrès UISPP, Lisbonne (4-9 septembre 2006)
Liège, ERAUL 115, 2006, p. 39-47

Report on the state of art of Upper Palaeolithic in Hungary 2001-2005

Viola T. DOBOSI
Hungarian National Museum, Budapest. tdv@hnm.hu

The five years passed since the last report has been a productive period for the Hungarian Upper Palaeolithic research, in spite of the still unidirectional flow of information among the branches of sciences dealing with the Ice Age. We can observe some positive changes recently, but it is still archaeology supplying data and the results of our interdisciplinary partners remain all too frequently unheard of.

The collaboration of the past few years yielded continuously accumulating new data, new syntheses concerning various fields relating the Upper Palaeolithic. We can summarize them as follows.

Geomorphology

The Pleistocene chronostratigraphy was summarised by Márton Pécsi, together with co-authors, in 1993. This synthesis comprises the results of decades of analysis (PÉCSI, Negyedkor és löszkutatás [Quaternary period and loess studies], Budapest).

For a long time, the Upper Palaeolithic archaeological stratigraphy adopted this standard, supported by various arguments and international references. The re-evaluation of this chronological scheme has been topical for a few years now with more or less intensity. Pécsi himself saw the contradictions clearly: "Though lately we can observe considerable efforts in matching different time scales, still the palaeogeographical reconstruction of the young loesses and palaeosol series show considerable shift of phases compared to ice-covered and ice-free stages" (*op.cit*. 235).

In Volume 3 of the periodical *Praehistoria*, Hahn, Loboda and Ms. Siska revised traditional terrace-levels, the classical Late Pleistocene loess- and soil series (Paks, Mende, Basaharc) and included new sequences into the analysis (e.g., Pécs, Szekszárd, Almásneszmély). The new results considerably re-arranged notions on series and layers. Most of the standard levels proved to be one complete period older than postulated formerly.

New results were achieved by TL dating of certain sequences. The two volcanic ash layers (Bag Tephra and Paks Tephra) were identified in several sequences (study by Gábris-Horváth-Novothny-Ujházy), offering new possibilities for the synchronisation and dating of layers. The two pedochronological efforts seem both convincing, however they contradict each other at several points and these differences in opinion could not be harmonised as yet.

Ecological reconstructions

Ecological reconstructions changed their scope from continent-wide areas and vast time spans of 10-20 thousand years to the study of micro-regions, supplying archaeology with a more applicable sketch on the environment of certain areas inhabited and populated by a given culture. A new generation of talented young scholars from the science faculties of the Debrecen and Szeged Universities work diligently on the reconstruction of the Late Pleistocene and the Early Holocene periods mainly. Their results and applied methodology has been summarised by one of the co-ordinators of these works, P. Sümegi, in two text-books. Their activity is centred mainly on the Early Holocene; however, their results have a bearing on the late Pleistocene as well. They have performed the interdisciplinary study (sedimentological-microfaunistical-malacological-botanical) analysis of several loess profiles connected to Palaeolithic sites as well.

Palaeobotanical research

The PhD thesis of E. Rudner is an important step in Hungarian palaeobotanical research. Anthracotomy from the start has been a valuable source of information for the students of the period. Rudner continued the work of distinguished predecessors. Besides tracing the interstadials of the Pleniglacial B period and their vegetation, this work has brought about new results in xylotomy as well. Unfortunately, similar to other fields of palaeobotanics, the research personnel are unevenly distributed.

Raw material studies

Raw material studies were continued. As the comparative raw material collection became more representative for

the Carpathian Basin concerning chipped stone artefacts, the accumulation of these types of rocks naturally slowed down. Focus of collection in the Lithotheca centred more on polished stone tool raw materials as well as building- and decorative stones. Apart from continuous collecting activity, the time has come for minute analytical work as well. With the chemical analysis of raw materials of various sources and geological origin, the analysis of fossils in siliceous rocks, the fingerprinting of individual sources can be made feasible. Apart from the activity of Zs. Kasztovszky, K.T. Biró and A. Markó, several university dissertations were born in this subject. The archaeological importance of these studies is exceptional: we can obtain unique information on the activity radius, the exchange network and the routes of the given communities. We can obtain these data not only looking at exotic goods like rock crystal or amber but masses of everyday activity products.

Archaeological research

Archaeological research of the past five years are organically connected to a tradition of almost 110 years, excavating and evaluating new sites as well as revising old ones. Belonging to the latter, a large project supported by various grants and comprising several institutions aimed at the revision of the two most famous cave sites in the Bükk Mountains. Apart from some minor authenticating excavations in the caves, emphasis was mainly on the full revision of the old excavation material. According to the leader of the project, Á. Ringer (Institute of Prehistory and Antiquity of the Miskolc University): "[…] a revision-research project between 1999-2002 on the reinterpretation of the litho-, bio and archaeostratigraphy of the Szeleta and Istállós-kő caves of the Bükk Mountains and for obtaining new C14 dates" (Ringer 2002b:47). Results of the project have been published in several communications. The revision work has relatively few new results concerning the Upper Palaeolithic period.

The most important new results of the past few years concerning Hungarian Upper Palaeolithic have been founded by systematical field surveys: finally, we could locate the long-missed open-air Aurignacian sites. A big comfort for Hungarian Upper Palaeolithic research, we have series of typical stone tools missed so far from the cave site assemblages.

Another revision project was aimed at the bone tools of the Aurignacian culture. The participants of the project were M. Otte, Liege (Belgium), I. Turk, Ljubljana (Slovenia), Z. Horusitzky, Auffargis (France), V.T. Dobosi, Budapest (Hungary). This project aimed at the elaboration of bone tools on Aurignacian sites from Slovenia, Hungary and perhaps Slovakia according to similar criteria. By working on the relevant Hungarian material, the author also joined the Istállóskő revision project lead by Á. Ringer.

There were no significant new excavations performed on the localities of the older phase of the Gravettian culture, but the publication of two important assemblages of this period, Sajószentpéter and Hont-Parassa, is the result of the last five years.

Excavations were continued at the locality of the Ságvárian culture at Mogyorósbánya. A new-old site was added to the culture, Szob-Ipolypart, known mainly on the strength of the trinket-snail depot. Archaeological analysis of the finds, performed by A. Markó in his university thesis, assigned the industry to the Ságvárian circle. In the same work, a survey of the Upper Palaeolithic sites along the left side of the Danube Bend in a length of some 20 km was reported on.

After 30 years, a new cadastre of Hungarian Palaeolithic sites was prepared, including a number of new Upper Palaeolithic sites as well. The number of sites belonging to the individual cultures was transferred here from that survey.

Summing up we can observe that the former, convenient periodisation suggested by Mussi-Roebroeks ("Big Mosaic", EUP, MUP, and LUP) seemingly adaptable to Hungarian circumstances will have to be soon modified. Following the logical scale of the Pavlovian convention, the current sketch of the Hungarian Upper Palaeolithic (probably soon to be modified) is the following:

- Early Upper Palaeolithic: developed Szeletian
  Aurignacian
- Middle Upper Palaeolithic: Gravettian entity/Pavlovian
- Late Upper Palaeolithic: Gravettian entity/Ságvárian
  Gravettian entity/Epigravettian
  Gravettian entity/Lower gravettian
  Gravettian entity/Upper gravettian

For setting up the impeding new standard we need to support some data with further scientific and archaeological observations, namely:

- the archaeologically "sterile" phases connected to the interstadials, more precisely, the fossil soils formed in interstadial conditions start to get some scanty archaeological content;
- the loess-palaeosol stratigraphy, formerly considered as guideline, is gradually rearranged;
- the new Aurignacian chronology is shifted to the period of the Early Gravettian;
- if the "short" dates relating to the developed Szeletian culture prove consistent, than no stylistic bravura can rank it to Early Upper Palaeolithic any more, same as the approvedly contemporary Aurignacian II complex;
- in this case, an Aurignacian – Developed Szeletian – Pavlovian cultural "triumvirate" is formed in the time of the Interpleniglacial;
- as according to our present knowledge the Early Szeletian seems closer to Middle than Upper Palaeolithic altogether, for the EUP period we are left with only a few bone-points and atypical stone artefacts of the Aurignacian I known from two sites.

Let us briefly consider the Upper Palaeolithic cultures in present-day Hungary.

Developed Szeletian

The younger phase of the leaf-point industry named after the Szeleta cave and some isolated single leaf-points found

as surface finds keep the interest of Hungarian Palaeolithic research in a constant motion. The leaf-points found in the Szeleta cave with Gravettian complementary tools (same as the bifaces found in the lower cultural layer, accompanied by Middle Palaeolithic types) force researchers to take a stand in the questions of cultural classification, predecessors and heirs, relatives, contacts, chronology as well as the role and priority of the leaf-points in the lithic industry.

Excavations initiated by Á. Ringer, performed between 1999-2002 in the Szeleta cave yielded new C-14 dates and a new archaeological stratigraphy of the Würm period. Especially important is the sequence of sediments paralleled to the Istállóskő cave (see References).

According to the new measurements, the Developed Szeletian (Layers 4-6 of the Szeleta cave) is contemporary with the second settlement wave of the Gravettian entity.

Cave sites of the Developed Szeletian culture are restricted to the Eastern half of the Bükk Mountains (*Szeleta cave, Puskaporos, Istállóskő caves*). Single leaf-points are known to occur at several places in the Northern stripe of the country (*Miskolc, Sárospatak, and Aszód*).

Aurignacian

The Aurignacian people are supposed to proceed in two directions from the Balkan Peninsula, the north-east and to the west. The Carpathian Basin is along the western route; the "flagship" among the sites being the *Istállóskő* cave here. In the almost hundred years of archaeological research of the site it raised various chronological problems and offered only one clue; the two phases of Aurignacian culture are contemporary with the two chronological horizons of the Szeletian culture in the Bükk Mountains.

Typical Aurignacian stone tools are missing from both, clearly separate layers of the cave, therefore it could be inserted into the system of classification proposed by Djindjan, Kozlowski & Otte in 1999 (*Le Paléolithique supérieur en Europe*). The rich collection of typical Aurignacian bone points indicates, apart from the cultural affiliation, the function of the site as well.

Chronology of the Aurignacian in Hungary has still not arrived at a stand-still. Apart from the evaluation of formerly accepted astronomical "long" chronology or dating on the basis of sedimentation rates, the interpretation of recent radiometric absolute chronological dates still divide opinions.

The radiocarbon age of the younger, upper cultural layers (Aurignacian II by L.Vértes), dated to 28-32 thousand years BP is generally accepted. This date conforms to overall chronology of the Aurignacian culture.

For the age of the lower complex characterised by split-base bone points (Aurignacian I), B. Adams accepted the result of new measurement rendering the age of the culture probable at around 33 thousand years BP (Adams 2002:54). Á. Ringer dated Aurignacian I on the basis of archaeo-stratigraphical considerations some 10 thousand years earlier than that, around 44 thousand (Ringer 2002:49). The known data from the Balkans and Central Europe support the younger date.

The scanty list of Aurignacian cave sites (*Istállóskő*, *Peskő*) was completed on typological grounds by four further cave sites Zs. Mester in a former study (*Jankovich cave, Kecskésgalya*, *Farkaskő* and *Sólyomkút*).

The lack of open-air Aurignacian sites was enigmatic, knowing the Slovakian sites lying close to the Hungarian border. Their discovery, and in considerable high number was long awaited for, resulting from intensive field surveys.

The first among these sites is *Acsa-Rovnya*, where the author has already completed two seasons of authenticating excavations. The site was found at the south-western part of the Cserhát Mountains, lowest member of the Northern Mid-Mountain range, more a range of hills than mountains, on a wide plateau. On the basis of the excavations performed, the stratigraphy is incomplete; the hill-top is strongly weathered. There are no faunistical or botanical finds, probably due to unfavourable fossilisation circumstances. Our effort to date the site by radiocarbon measurements proved so far futile. So far its basic merit lies in the mere existence of the site. Further typical material was collected in large quantities from the surface at *Nagyréde-Öreghegy* (paper by Lengyel-Béres-Fodor). Another promising site, probably belonging to the older (?) Aurignacian level is the surface finds from *Andornaktálya-Zúgó-dűlő* (report by Á. Ringer).

There are about 5 more sites, demarcated by surface collecting that seem to belong to Aurignacian open-air sites; their cultural identification, however, needs further authenticating work.

Gravettian

The middle phase of the Upper Palaeolithic (Middle Upper Palaeolithic) and its late phase (Late Upper Palaeolithic) is the period of the Gravettian entity. This term is used in a wide sense denoting the chronologically well separated cultural unit, following a uniform way of life, with similar settlement strategies, comprising Central and Eastern Europe into one cultural unit from Wachau, Austria till the river Don. Apart from some characteristic tool types known as *fossiles directeurs*, this entity was formed of a mosaic of cultures connected with each other locally and regionally.

Pavlovian

The first wave of settlements reached the Carpathian Basin from the core quarters of the Pavlovian in the early periods of the culture. Chronologically, the finds are concentrated to the Interpleniglacial/Denekamp interstadial/Paudorf period, in topographical respect, to the northern stripe of Hungary, indicating, in a way, the direction of inflow from the core areas lying the north-east.

Apart from the known, investigated and published sites, intensive field surveys revealed promising localities in

the valley of the river Galga at *Püspöhatvan–Takácshegy*, *Csővár* and *Galgagyörk* (field surveys by A. Péntek). From the close vicinity of these sites, two workshop sites planted on the hydroquartzite banks out-cropping the margins of the terraces are known for more than a decade. The wide valley of the Galga, its terraces and the adjoining hilly region will soon become familiar to students of the Middle Palaeolithic as well on the strength of current studies by A. Markó.

The settlement strategies of the hunters of the "Golden Age" follows a clear pattern, the settlement forms and features are similar on all important Hungarian sites of this period. They selected isolated hill-tops of 230-240 height above sea level, separated with more or less steep slopes from the surrounding hills. The settlements are horizontally large, can extend to several hundred square metres. The cultural layer is thin, sporadical; the "intensity" of the settlement is below the usual values known for younger settlements.

Fresh water was always close by, important raw materials were procured locally or regionally. A convenient proximity of various ecological niches supplied easy and variable source of nutrients. 12 sites are known from this period.

Ságvárian (or Pebble Gravettian)

This culture belongs to the early phase of the Late Upper Palaeolithic, geochronologically speaking, the interstadials around the last cold peak of the Würm glacial. The eponym site, *Ságvár*, is one of the earliest known open-air Palaeolithic sites in Hungary. The independent life of the culture started relatively late, though the special character of the finds had been recognised by many scholars at an early date. The chronological-cultural identification of the culture started with the discovery of the Ságvár-Lascaux interstadial period, a quarter of a century before (research by V. Gábori-Csánk). Later on, the archaeological revision of the finds and the discovery and excavation of the site Mogyorósbánya, as the richest representative site has lead us to delineating the Ságvár archaeo-chronostratigraphical period.

There is little evidence on the roots, temporal and spatial frames of the formation of the Ságvárian culture. It is known so far only from 4 localities within the Carpathian Basin. These sites, however, are all large and/or multilayered settlements (*Ságvár, Mogyorósbánya, Szob* and *Madaras*). Therefore we suppose it to be a vigorous, and densely populated.

The structure of the Ságvárian sites proved to be the most complex. The settlements comprise several habitation units (at Mogyorósbánya, four) and from this period we also know semi-subterrain living premises from Ságvár (Gábori & Gábori 1958). At Madaras, the occurrence of several large hearth-places can be interpreted, in spite of the scanty amount of archaeological finds, as sign of intensive habitation.

The Ságvárian occupied the same type of ecological niches as the contemporary cultures. They reacted, however, the similar conditions of living with different tool kit. Archaeological differences could be observed in the ratios of the type lists, the dimension of the tools and the selection of the raw material.

Instead of the traditional and expected classical blade technology, they returned to the use of pebbles which is especially notable after the elegant Pavlovian tool kit. Due to this technological feature, the industry looks sort of fragmented and atypical. Many of the tools preserved more or less of the pebble cortex. The tool types are the same as in the other cultures of the Gravettian entity, but the degree of elaboration is rough and the support blanks look more like thin flakes than blades.

Epigravettian

We can separate two phases: an older phase connected to the small embryonal soils of the Ságvár-Lascaux interstadial, around 18-16.000 BP, and a younger phase dated to the end of the Ice Age. We know extremely little about the latter; we cannot treat it as a separate culture and it certainly deserves the term "epi" on the basis of its stratigraphical position. They can be observed on part of the Epigravettian settlements (*Jászfelsőszentgyörgy*, *Pilismarót*), immediately below the humus, typically in heavily disturbed position. Individual settlements of this younger phase are supposed to be identical with stray-finds of 1-2 pieces found in sediments dated to 11-12.000 BP.

The industry of the Epigravettian looks like an atypical, "degraded" heir to the Pavlovians who made quality tools on regular blades.

According to our present knowledge, settlements of the older phase of the Epigravettian culture were concentrated mainly on areas of strategical significance. The sites are mainly located on the classical Gravettian hilly regions along the margin of loess-covered terraces along large rivers. The terraces are dissected with dry or active stream valleys, giving a way to migrating herds of animals to the shallows or the alluvial plain. On such areas, for example, in the Danube Bend, a range of small settlements can be found 500-800 m from each other in a distance of sight and hearing, probably remains of small communities in close contact with each other (hunting–teams?), functioning seasonally.

On the Great Hungarian Plain (Alföld), at Pleistocene relict surfaces covered with sandy loess, the sites can be located partly in loess outcrops (brickyards) in the embryonal soil layers, several metres below the current surface.

Former orographical endowments, the wide, swampy alluvial plains isolated the migrating ad-hoc small hunters' communities. Part of the temporary camps prove that they were in use in springtime (bird's eggs!), when hunted game could be occasional.

The only pole-post tent known from Hungary can be assigned to this culture. This type of habitation is widely distributed in the Late Palaeolithic, but there was only one such feature

found here at Dömös. The basis of the tent, surrounded with antlers, was excavated in the 1970's (M. Gábori and V. Gábori-Csánk).

The preserved Gravettian way of life as well as tool working/typology can be attributed more to adaptation to Late Ice Age condition than adherence to tradition.

The tool kit of the Epigravettian blade industries also reflects the *ad hoc* character of the settlements. On the poor, scattered and moderately intensive settlement surfaces there are only few implements and they are not the top products of the period. It is, however, most remarkable that we can obtain information on the long range contacts of the communities extending over several hundred kilometres in direct or indirect form (occurrence of distant raw materials, rock crystal, trinkets, amber).

28 open air sites are known and have been excavated, completely or partly.

In most of the "inhabited" caves (22 caves in the Bükk, Pilis and Gerecse Mountains, respectively) there is even more scanty material that can be classified here on the basis of their stratigraphical position.

There are about 70 more collecting spots with surface stray finds, represented only with some flakes and tools, without authenticating that can be probably classified to the Upper Palaeolithic period.

Here we have to mention workshop sites. Traces of raw material processing were observed around known primary sources of raw materials in the Northern Mid-Mountain range (Tokaj, Mátra, Cserhát hydro- and limnic quartzites) and in Transdanubia (radiolarite). Considerable part of these raw materials was known and utilised in the Palaeolithic period as well. The exploitation (?) or workshop activity may have started during the Palaeolithic period. 18 potential Upper Palaeolithic workshop sites have been registered so far.

Sites	Archeo./ Geology	Culture	Sediment	lab.code	BP	CalBC
Szekszárd	Arch	Epigravettian	Fluvial	Hv408	10350±500	10826(10280)9060
Lovas	Arch	?		ETH15199	11740±100	
Almásfüzitő	Geo		Fluvial	Hv6958	11850±110	12010(11860)11726
Dunaföldvár	Arch	Epigravettian	Loess	Hv1657	12110±315	12601(12180)11796
Zalaegerszeg	Arch	?	Loess	Hv1816	12125±300	12601(12200)11831
Pilismarót-Pálrét	Arch	Epigravettian	Loess	Hv12988	13130±100	
Arka-upper	Arch		Clay	GrN 4218	13230±85	13972(13840)13698
Szeged-Öthalom	Arch	Epigravettian	Loess	deb-3344	15920±170	17850-17690
Budapest-Csillaghegy	Arch	Epigravettian	Loess	deb-3160	15940±150	17850-17700
Esztergom	Arch	Epigravettian	Loess	deb-1160	16160±200	17950-17750
Tokaj-Patkóbánya	Geo		Loess	deb-4364	16320±170	18010-17790
Tápiósüly	Geo		Loess	Hv1615	16750±400	18903(17540)17074
Lakitelek-Brickyards	Geo		Loess	deb-1536	16820±200	18450-17960
Bodrogkeresztur-By.	Geo		Loess	deb-1096	16850±200	18470-17970
Arka-lower	Arch	Epigravettian	Clay	GrN4038	17050±350	18749(18230)17725
Tiszaföldvár	Geo		Loess	Hel 1206	17100±240	
Tokaj-Csorgókút	Geo		Loess	deb-1076	17210±170	18870-18210
Tokaj-Csorgókút	Geo		Loess	deb-4330	17500±110	19210-18530
Tokaj-Kereszthegy	Geo		Loess	deb-4918	17620±170	19380-18630
Bodrogkeresztur-By.	Geo		Loess	deb-1614	17680±200	19470-18680
Ságvár upper	Arch	Ságvárian	Loess	GrN1959	17760±350	19684(19220)18738
Tiszaalpár	Geo		Loess	deb-1078	17860±350	19800-18770
Nagy-Mohos	Geo		Lacust	deb-5016	18 159±247	
Madaras	Arch	Ságvárian	Loess	Hv1619	18805±405	
Jászfelsőszent-györgy	Arch	Epigravettian	Loess	deb-1674	18500±400	20590-19450
Arka	Arch	Epigravettian	Clay	A518	18700±190	
Ságvár lower	Arch	Ságvárian	Loess	GrN 1783	18900±100	
Mogyorósbánya	Arch	Ságvárian	Loess	deb-9673	19000±250	21050-20140
Mogyorósbánya	Arch	Ságvárian	Loess	deb- 1169	19930±300	
Törökszentmiklós	Geo		Loess	Hel 1204	20100±330	
Dunaújváros	Geo		Loess	Hv12987	20150±410	
Tokaj	Geo		Loess	Hv1775	20350±470	
Pilismarót-Basaharc	Geo		Loess	Hv 5426	21165±865	

Pilismarót-Basaharc	Geo		Humus	Hv5426	21265±865	
Mohács	Geo		Loess	Hel 1205	21520±350	
Balatonszabadi	Geo		Loess	deb-	21730±660	
Dunaszekcső	geo		Loess	Hv4189	21740±320	
Nagy-Mohos	Geo		Lacust.	deb-4987	21 756±267	
Madaras	Geo		Loess	deb-3104	21 937±252	
Szeletian*	Arch	Developed Szeletian		ISGS-A- 0131	22107 130	
Lakitelek	Geo		Loess	deb-1562	22 110±300	
Kardoskút	Geo		lacustrin	deb-4572	23 290±285	
Tokaj-Patkó	Geo		Loess	deb-4350	23519 ±494	
Tokaj-Csorgó	Geo		Loess	deb-1562	23571±486	
Katymár	Geo		Loess	deb-3064	23749±494	
Pilismarót-Basaharc	Geo		Loess	deb-3353	24030±317	
Hódmezővásárhely	Geo		Loess	Hel 1203	24130±360	
Szeged-Öthalom	Geo		Loess	deb-	25200±300	
Szeletian*	Arch	Developed Szeletian		ISGS-A- 4460	>25200	
Szeletian*	Arch	Developed Szeletian		ISGS-A-0189	26002 182	
Bodrogkeresztur	Arch	Pavlovian	Loess	deb-2555	26318±365	
Veszprém	geo		Loess	Hv1777	26350±311	
Tokaj-Csorgó	geo		Loess	deb-3042	26618±532	
Lakitelek	geo		Loess	deb-4346	26736±629	
Bodrogkeresztur-By.	geo		Loess	deb-3049	26851±398	
Tokaj-Kereszthegy	geo		Loess	deb-5052	26962±657	
Pilismarót-Basaharc	geo		Loess	Hv 2593	27045	
Megyaszó	arch	Pavlovian	Loess	deb-5378	27070±300	
Mende	geo		Loess	A3430	27200±1400	
Tarcal	geo		Loess	deb-4345	27251±288	
Tokaj-Kereszthegy	geo		Loess	deb-2657	27323±844	
Hont-Parassa III	arch	Pavlovian	Loess	deb- 5027	27350±610	
Tokaj-Patkó	geo		Loess	deb-3034	27491±362	
Püspökhatvan	arch	Pavlovian	Loess	deb-190	27700±300	
Istállóskő***	Arch	Aurignacian II	Cave sed.	ISGS-A-0186	27932±224	
Tokaj-Csorgó	geo		Loess	deb-3035	28225±360	
Győr-Szabadrét	geo		Peat	deb-2231	28470±300	
Bodrogkeresz-tur	arch	Pavlovian	Loess	GxO195	28700±3000	
Istállóskő*	Arch	Aurignacian I	Cave soil.	ISGS-A-0185	29035 237	
Mende	geo		Loess	Mo422	29800±600	
Katymár	geo		Loess	deb-3058	29828±554	
Istállóskő **	arch	Aurignacian I?			30710± 600	
Istállóskő**	Arch	Aurignacian I?			30900± 600	
Istállóskő***	Arch	Aurignacian II	Cave soil	ISGS-A-0188	31608± 295	
Istállóskő***	arch	Aurignacian I.	Cave loess	ISGS-A- 0187	32701± 316	
Istállóskő***	arch	Aurignacian I.	Cave soil.	ISGS-A-184	33101± 512	
Istállóskő°	geol		Cave loess	Beta178809	42320±1430	
Istállóskő°°	geol		Eroded layer	Beta178810	43750±1730	
Istállóskő°°°	Arch	Aurignacian I	Cave soil		44300±1900	

Table 1 - Radiocarbon dates of Hungarian Upper Palaeolithic. This table is a completed version of the table presented in V.T. Dobosi & Zs. Szántó, Traditional and radiocarbon dates of the Gravettian Period. *Archaeologiai Értesítő* 128:5-16. See details and references there. (*) *In*: Adams B. (2002) - New radiocarbon dates from Szeletian and Istállóskő caves. *Praehistoria* 3:53-55 (with Ringer's remarks); (**) With Ringer's remark: 14 C data without exact sampling position. *In*: Ringer Á. (2002) - The new image of Szeletian and Istállós-kő caves in the Bükk Mountains. *Praehistoria* 3:47-55; (***) Adams B. & Ringer Á. (2004) - New C14 Dates for the Hungarian Early Upper Palaeolithic, *Current Anthropology* 45:541-551; (°) *In*: Ringer Á. (2002) - The new image of Szeletian and Istállós-kő caves in the Bükk Mountains. *Praehistoria* 3:47-55. With Ringer's remark: "h" layer belongs to "Hengelo", between Aurignacian I. and Aurignacian II; (°°) *In*: Ringer Á. (2002) - The new image of Szeletian and Istállós-kő caves in the Bükk Mountains.*Praehistoria* 3:47-55. From sediments between the Aur.I

References

Adams B. & Ringer Á. (2004) - New C14 Dates for the Hungarian Early Upper Palaeolithic. Current Anthropology 45(4):541-551.

Bereczki Á. (2000) - Beiträge zur Typologisierung der Venusstatuetten der Kultur Gravettien. *Praehistoria* 1:173-185.

Bereczki Á. (2004) - Rókaszemfog ékszerek viselési szokásai két felső-paleolitikus temetkezés példáján. [Die Rolle der Polarfuchszähnen an der Determinierung des Gesclechtes im Kulturkreis Ostgravettien]. *In*: G. Ilon (red.), *ΜΩΜΟΣ III*. Szombathely, p. 43-54.

Biró K.T. (2002) - Important lithic raw materials in the Carpathian region. *In*: J. Ganczarski (ed.), *Starsza i srodkowa epoka kamienia w Karpatach Polskich [The Older and Middle Stone Age in Polish Carpathians]*. Krosno Mitel, p. 301-315.

Biró K.T. (2004) - A kárpáti obszidiánok: legenda és valóság/Carpathian obsidians: legend and reality. *Archaeometry Workshop* (Budapest). Budapest MagyarNemzeti Múzeum 1(1):3-8.

Dobosi V.T. (2001) - Upper Palaeolithic Research in Hungary between 1997-2001. *In*: *Le Paléolithique supérieur européen. Bilan quinquennal 1996-2001*. ERAUL 97:53-58.

Dobosi V.T. (2001) - After the Golden Age. *Section 6. Upper Palaeolithic. XIVth Congress of the UISPP* Liège (2-8 sept. 2001).
Liège, Pré-actes, p. 173.

Dobosi V.T. (2001) - Ex Proboscideis. *In*: *The World of Elephants*. Proceedings of the 1st international congress, Roma.

Dobosi V.T. (2001) - Antecedents: Upper Palaeolithic in the Jászság region. *In*: R. Kertész & J. Makkay (ed.), *From the Mesolithic to the Neolithic*. Proceedings of the International Archaeological Conference, Szolnok l996. Budapest, p. 177-191.

Dobosi V.T. (2001) - Gravetti kultúra a Tokaj-Eperjesi hegységben. [Gravettian culture in the Tokaj-Presov Mountains]. *In*: Gy. Gyenis, A. Hevesi, L. Kordos, Zs. Mester, Á. Ringer & V.T. Dobosi, *Emberelődök nyomában*. Miskolc, p. 102-111.

Dobosi V.T. (2001) - About Ságvárian: chronological-cultural sketch of the Upper Palaeolithic in Ungarn. *In*: B. Ginter *et al.* (ed.), *Problems of the Stone Age in the Old World*. Kraków, p. 195-201.

Dobosi V.T. (2001) - A régészet lehetőségei a pleisztocén kutatásában. [Possibilities of archaeology in the research of the Pleistocene]. *Földtani Közlöny* 132:273-281.

Dobosi V.T. (2002) - Auf Schritt und Tritt. Rohmaterial Herkunftsgebiete aus Ungarn. *Hugo Obermaier Gesellschaft* 44. Tagung, Innsbruck.

Dobosi V.T. (2002) - Ex Proboscideis. Proboscidean remains as raw material on four Palaeolithic site. *Folia Arch. Hung* 49-50:17-27.

Dobosi V.T. (2002) - Mogyorósbánya – Ujfalusi dombok, Upper Palaeolithic site. *Régészeti kutatások Magyarországon* 1999:5-14.

Dobosi V.T. (2002) - Magyarországi paleolit lelőhelyek térképe [Map of Palaeolithic sites in Hungary]. *Földrajzi Értesítő* LI:413-414.

Dobosi V.T. (2002) - Bone finds from Istállós-kő cave. *Praehistoria* 3:79-102.

Dobosi V.T. (2003) - Das Paläolithikum und das Mesolithikum. *Führer die archäologische Ausstellung des Ungarischen Nationalmuseums*, p. 17-29.

Dobosi V.T. (2003) - Pebbles in the Hungarian Upper Palaeolithic. *In*: *Erkenntnisjäger. Kultur und Umwelt des frühen Menschen. Festschrift für Dietrich Mania*, p. 145-151.

Dobosi V.T. (2003) - Late glacial hunters. *In*: *Hungarian Archeology at the turn of the Millennium*. Ed. Zs.Visy. Budapest, p. 85-91.

Dobosi V.T. (2004) - The two sisters.Connection between the two geosciences in Hungary. *Unterlagen für die 46.Tagung der Hugo Obermaier-Gesellschaft*. Greifswald, p. 10-11.

Dobosi V.T. (2004) - The Palaeolithic Collection. *In*: J. Pintér (ed.), *Two Hundred Years History of the Hungarian National Museum and its Collections Budapest*.

Dobosi V.T. (in press) - Arboreal vegetation in Upper Palaeolithic. *Archeometry Workshop Sopron*.

Dobosi V.T. (in press) - Cadastre of Palaeolithic finds in Hungary – state of art 2005. *Communicationes Arch.Hung*.

Dobosi V.T. & Biró K.T. (2002) - Prehistorical and classical stone quarries ("mines") in the Carpathian Basin. *In*: E. Jerem & K.T. Biró (ed.), *Archaeometry 98*. BAR (II) 1043:819-823.

Dobosi V.T. & Simán K. (2003) - Hont-Parassa III. Orgonás,Upper Palaeolithic settlement. *Communicationes Arch. Hung.* 2003:15-29.

Dobosi V.T. & Szántó ZS. (2003) - A gravetti időszak hagyományos és radiokarbon koradatai. Traditional and radiocarbon dates of the Gravettian Period. *Archaeologiai Értesítő* 128:5-16.

---

and Aur.II; (°°°) *In*: Ringer Á. (2002) - The new image of Szeletian and Istállós-kő caves in the Bükk Mountains.*Praehistoria* 3:47-55. With Ringer's remark: 14 C data without exact sampling position. The suspiciously old date is waiting for further corroboration, it can be fitted into the existing range of radiocarbon dates is uncertain. The sediments dated to the Eemian interglacial from Szeleta-cave yielded younger dates!

Gábris Gy., Horváth E., Novothny Á. & Ujházy K. (2002) - History of environmental changes from the last glacial period in Hungary. *Praehistoria* 3:9-22.
Hahn Gy., Loboda Z & Siskáné Szilasi B. (2002) - The stratigraphy of loesses and terraces in Hungary. *Praehistoria* 3:23-37.

Járainé Komlódi M. (2000) - A Kárpát-medence növényzetének kialakulása. [Formation of the vegetation of the Carpathian Basin]. *Tilia* IX:5-59.

Kasztovszky Zs. & Biró K.T. (2004) - A kárpáti obszidiánok osztályozása prompt gamma aktivációs analízis segítségével: geológiai és régészeti mintákra vonatkozó első eredmények [Fingerprinting carpathian obsidians by PGAA: first results on geological and archaeological specimens] (In Hungarian with English Abstract). *Archaeometry Workshop* (Budapest), Magyar Nemzeti Múzeum 1(1):9-15.

Kasztovszky Zs., Biró K.T. & Dobosi V.T. (2005) - Investigation of Grey Flint Samples with Prompt-Gamma Activation Analysis. *In*: Kars-Burke (ed.), *Proceedings of the 33rd International Symposium on Archaeometry*, Amsterdam (22-26 April 2002).

Lengyel Gy. (2004) - Késő-paleolit telep Miskolc határában [Late Palaeolithic Site near Miskolc]. *In*: E.Gy. Nagy, J. Dani, Zs. Hajdú (szerk.), *ΜΩΜΟΣ II*. Debrecen, p. 11-20.

Lengyel Gy., Béres S. & Fodor L. (in press) - Lithic evidences of „classic" Aurignacian in Hungary.

Markó A. (2002) - *Őskőkori lelőhelyek az Ipoly-torok és Vác városa között [Palaeolithic sites between Ipoly`s fork and Vác]*. Thesis to the Arch. Inst.of ELTE.

Markó A. & Péntek A. (2003) - Másodlagos helyzetű levélkaparó Galgahévízről [A leaf-scraper of secondary position from Galgahévíz]. *Ősrégészeti Levelek* 5:5-7.

Markó A., Péntek A. & Béres S. (2002) - Chipped stone assemblages from the environs of Galgagyörk (Northern Hungary). *Praehistoria* 3:245-257.

Markó A., Biró K.T. & Kasztovszky Zs. (2003) - Szeletian felsitic porphyry: non-destructive analysis of a Classical Palaeolithic raw material. *Acta Archaeologica Hungariaca* 54:297- 314.

Markó A. & Péntek A. (2003-2004) - Raw material procurement strategy on the Palaeolithic site Legénd - Káldy farm (Cserhát Mountains, Northern Hungary). *Praehistoria* 4-5:165-177.

Markó A. (2004) - Újabb kőeszközök a galgagyörki Csonkás-hegyről [New stone artefacts from Galgagyörk-Csonkás hill]. *Ősrégészeti Levelek* 6.

Markó A., Biró K.T. & Kasztovszky Zs. (2003) - Felsitic Porphyry: Non-Destructive Analysis of a Classical Palaeolithic Raw Material. *Acta Archaeologica Hungariaca* 54:297-314.

Magyar E., Jakab G., Sümegi P., Rudner E. & Molnár M. (2000) - Paleobotanikai vizsgálatok a keleméri Mohos tavakon [Palaeobotanical analysis on the Mohos lakes at Kelemér]. Tőzegmohás élőhelyek hazánkban, kutatás, kezelés, védelem. *Gömörszőlős* 2000:101-131.

Mester Zs. (2000) - Sur la présence du silex de Świeciechów dans l'Abri de Sólyomkút (montagne de Bükk, Hongrie). *Praehistoria* 1:83-93.

Mester Zs. (2002) - Excavations at Szeleta Cave before 1999: Methodology and overview. *Praehistoria* 3:57-78.

Mester Zs. (2004) - Influences de la recherche préhistorique de la France sur celle de la Hongrie. *In*: *Actes du XXVIe Congrès Préhistorique de France – Congrès du Centenaire de la Société Préhistorique Française, Avignon–Bonnieux vol. I* (sous presse).

Mester Zs. (2004) - Pour continuer les investigations sur les gisements classiques en Hongrie: les grottes Szeleta et d'Istállós-kő. *In*: *Actes du XXVIe Congrès Préhistorique de France – Congrès du Centenaire de la Société Préhistorique Française, Avignon–Bonnieux 2004, vol. II* (sous presse).

Ringer Á. (2001) - A Bükk és a Cserehát a felső-paleolitikumban [The Bükk and the Cserehát in the Upper Palaeolithic]. *In*: Gy. Gyenis, A. Hevesi, L. Kordos, Zs. Mester, Á. Ringer & V.T. Dobosi, *Emberelődök nyomában*. Miskolc, p. 93-101.

Ringer Á. (2001) - Le complexe techno-typologique du Bábonyien-Szélétien en Hongrie du Nord. *In*: D. Cliquet (dir.), *Les industries à outils bifaciaux du Paléolithique moyen d'Europe occidentale*. Actes de la table ronde internationale organisée à Caen (Basse-Normandie - France) (14-15 octobre 1999). ERAUL 98:213-220.

Ringer Á. (2002a) - The chronostratigraphy and palaeo-human-ecology of the Middle and Upper Palaeolithic in Northeast Hungary, between 130,000 and 10,000 BP. *Praehistoria* 3:39-46.

Ringer Á. (2002b) - The new image of Szeleta and Istállós-kő caves in the Bükk Mountains:A revision project between 1999–2002. *Praehistoria* 3:47-52.

Ringer Á. (2002c) - A Szeletai- és aurignaci kultúra a Bükk hegység középső és felső paleolitikumának kronosztratigráfiájában [Szeletian and Aurignacian Culture in the Middle and the Upper Palaeolithic of the Bükk Mountains]. *Herman Ottó Múzeum Évkönyve* XLI:5-13.

Ringer Á. & Holló Zs. (2001) - Sajószentpéter Margit-kapu-dűlő, un site du Paléolithique supérieur dans la vallée de Sajó. *Herman Ottó Múzeum Évkönyve* 40:63-71.

Ringer Á. & Lengyel Gy. (2001) - Late Palaeolithic finds of Miskolc–Rózsás-hegy. *Herman Ottó Múzeum Évkönyve* 40:39-61.

Ringer Á. & Mester Zs. (2001) - A Szeleta-barlang 1999–2000 évi régészeti revíziójának eredményei [Results of the archaeological revision of the Szeleta cave in 1999-2000]. *Herman Ottó Múzeum Évkönyve* 40:5-19.

Ringer Á & Szolyák, P. (2004) - The topographic and stratigraphic distribution of the Palaeolithic hearths and finds in the Szeleta Cave. Contribution to re-interpretation of the assemblage. *Herman Ottó Múzeum Évkönyve* 43:13-32.

Rudner E.Z. (2001) - *Felsőpleisztocén vegetációtörténeti és paleoökológiai elemzések Magyarországról faszénmaradványok alapján* [*Upper Pleistocene*

vegetation history and palaeoecological analyses from Hungary on the basis of charcoal remains]. PhD theses, Pécs-Budapest.

Rudner E. & Sümegi P. (2001) - Recurring Taiga forest-steppe habitats in the Carpathian Basin in the Upper Weichselian. *Quaternary International* 76-77:177-189.

Simán K. (2000) - Manufacture of Palaeolithic stone tools and the technical terms. *Folia Archaeologica* XLVIII:7-25.

Tillier A., Mester Zs., Henry-Gambier D., Pap I., Ringer Á. & Gyenis Gy. (in press) - The Middle-Upper Palaeolithic transition in Hungary: an anthropological perspective. *In*: V. Cabrera Valdes (ed.), *International Colloquium „En el Centenario de la Cueva de el Castillo: El ocaso de los Neandertales”*. Santoña (8-10 sept. 2003).