Pierre NOIRET (ed.) - *Le Paléolithique supérieur européen. Bilan quinquennal 2006 - 2011,* Union Internationale des Sciences Préhistoriques et Protohistoriques, Commission VIII, ERAUL 130, Liège, 2013, p. 39-47.

HUNGARY

Viola T. DOBOSI
Magyar Nemzeti Múseum, Múzeum Körut 14-16, 1088 Budapest, Hungary
tdv@hnm.hu

The scientific investigation of the Hungarian Upper Palaeolithic between 2006 and 2010 yielded some interesting, sort of asymmetrical, results (fig 1).

The most important new development was in the study of the *Aurignacian* culture. A range of open air Aurignacian settlements that were enigmatically missing for long decades came to light recently. Several collection spots became known in the lower reaches of the Northern Mid-Mountain Range. Their topographical position is corresponding to, generally, the large Pavlovian settlements: on separated hilltops along stream valleys, located at 200-220 m a.s.l. Excavations have been performed on two sites, *i.e.* Andornak–Zúgó dűlő and Acsa-Rovnya.

Concerning the *Gravettian* entity, we have no new results from the Pavlovian period. The Younger Blade Phylum and the Epigravettian Phylum, following the Pavlovian culture were enriched by some new sites. Essential amount of some recent or older field surveys got into the Hungarian National Museum. Among them, the preliminary elaboration of two sites was published.

On the largest site of the *Ságvárian* culture, Mogyorósbánya, the excavations were finished after 9 excavation seasons. The limits of the IIIrd settlement patch were found from three sides after opening some 400 square metres of habitation surface. The fourth side could not be reliably closed with a finds-free stripe as yet. The remainders of the settlements may serve for authenticating excavations for future research using more evolved investigation methods obtaining even more information.

Aurignacian

Andornak – Zúgó-dűlő

The first open air Aurignacian site excavated in Hungary. The locality was found in the 1980-ies and excavated by a Hungarian-Polish team between 2001 and 2002 (Kozlowski & Mester 2003-2004). Most of the finds comprise surface collected material. The excavations yielded two layers with finds. Among the approximately 1400 worked artefacts 130 pieces were typical tools. The use of high quality raw materials testifies the activity of the community and its wide system of connections. No specific natural scientific (paleontological, paleobotanical etc.) evidence was mentioned in connection with the site. The lower level was dated 30,180 ± 330 BP (Budek & Kalicki 2003-2004, p. 147). Following the first publication, the elaboration of the finds is further continued.

Acsa-Rovnya

Following several surface collections and excavations in 2002 and 2004, respectively, in 2007 A. Péntek donated the material of his former collections to the Hungarian National Museum. The acquisition data are summarised in Table 1.

Date	Collected by	Activity	Inventory of HNM
1989	Patay Dobosi	field survey	
2000. Dec.	Béres T. Biró Dobosi	field survey	Pb 2001/1-28 Pb 2003/764-797
2002. Aug.	Dobosi	excavation	Pb 2009/1. 1-215
2002. autumn	Homola	field survey	Pb 2003/756-763
2003	Béres Péntek	donation	Pb 2003/346-755
2004. Aug.	Dobosi	excavation	Pb 2006/1-111
2007	Péntek	donation	Pb 2010. 6. 1-93

Table 1. Acquisition data concerning the Acsa-Rovnya Aurignacian site.

This summary concerns the finds obtained so far. The large hill-top is under cultivation and further finds can be expected.

Basic statistics of the Acsa finds:

Tools: 436 pieces
End-scrapers: 327 (on blade: 150, on flake: 102, Aurignacian scraper: 30, thumbnail scraper: 7, double scraper: 12, the rest are core-scrapers and combined scrapers
Burins: 55
Rabot: 1
Borers: 6 db
Side-scrapers: 40 (on flake: 25, transversal: 7, double: 8)

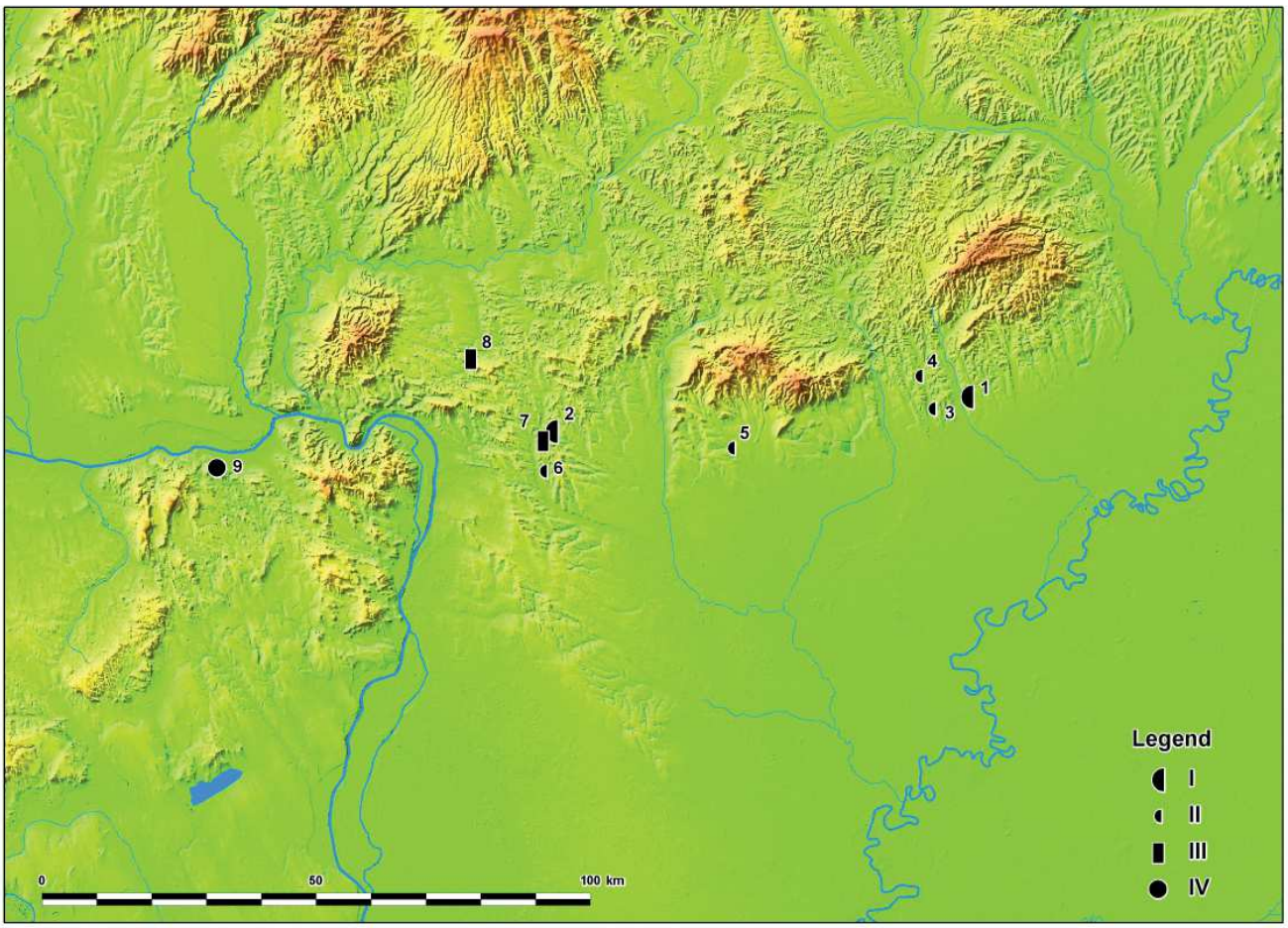

Fig. 1. Map of the sites
1. Andornak, 2. Acsa-Rovnya, 3. Egerszalók, 4. Demjén, 5. Nagyréde, 6. Galgagyörk, 7. Acsa-Viszoki, 8. Romhány, 9. Mogyorósbánya. I. Aurignacian sites, excavated; II. Aurignacian surface finds; III. Epigravettian surface finds; IV. Ságvárian site, excavated

Bifacial tools: 7 (Leaf points: 3, leaf scrapers: 2, hand axe: 1, knife 1)
Blades: 166 (retouched blade: 51)
Worked flakes: 49
Cores and core derivatives: 68
Pebbles and pebble derivatives: 35
Hammerstones: 2

Metric data
Average length of the inventory: 40,3 mm
The width / length ratio of the tool kit is 58,3 %, *i.e.*, a relatively bulky Upper Palaeolithic industry

Raw material
Total registered artefacts: 7380 pieces
Hydro / limnoquartzite: 96,7 % (Local variants)
Radiolarite: 1,5 % (Various colours, yellow, liver-brown, greenish marbled, flesh coloured)
Szeletian felsitic porphyry: 0,8% (from the known E-Bükk sources). This raw material was connected almost exclusively to the Szeleta culture until very recently. It was present, however, in various quantities depending on period and distance from the sources in most of the Palaeolithic periods from the Middle Palaeolithic till the Epigravettian. Distribution of felsitic porphyry, together with that of obsidian, essentially helped to trace the direction and route of contacts.
Andesite: 0,4 % (Local raw material, inferior quality for the production of chipped stone tools. Common in the form of lumps in the cultural layer.)
Sandstone: 0,2 % (Probably fragments of a large block with crusted, geometrically fractured pieces)
Silex: ≤ 0. 1 % (Locally available pebbles)
Obsidian: ≤ 0. 1 % (From the known Tokaj sources)

Comparing the Upper Palaeolithic find assemblages with statistically adequate amount of tools justify the general tendency in the development of the type spectrum. The most important features are the essential difference in the ratio of scrapers compared to burins, the presence of bifacial items in the Aurignacian and the high ratio of pebble tools missing at Acsa but very frequent in the Ságvárian (Table 2).

Types	Aurignacian %	Gravettian %		
		Pavlovian	Epigravettian	Ságvárian
end scrapers	61	32	26,6	21,7
borers	+	1,8	3,4	+
burins	10,2	33	33,3	36,3
blunted blades	–	8,6	0,2	0,7
side scrapers	7,5	4,6	4,3	5,4
bifacials	1,3	–	–	–
pebble-derivates	–	–	–	6

Table 2. Comparison of typological features at some large Hungarian UP assemblages. Assemblages used in this compilation: Aurignacian – Acsa-Rovnya, 536 pieces; Gravettian entity, including Pavlovian – Bodrogkeresztur-Henye: 813 pieces, Epigravettian – Pilismarót complex: 438 pieces, and Ságvárian – Mogyorósbánya : 447 pieces.

Further open-air Aurignacian sites located recently comprise: Egerszalók, Demjén, Nagyréde and Galgagyörk. They are all awaiting for authenticating excavations.

Gravettian entity, Ságvárian

The main steps in the research history of the Ságvárian culture can be summarised in the following:

1. In the archaeological material of the open-air sites following Late Glacial Maximum the typological and technological differences were observed since several decades. The explanation given was partly regional, partly chronological. The limit of Western / Eastern cultural influence was set along the line of the Danube.
2. An important result of the Palaeolithic research of the 1970s, the recognition of the Ságvár-Lascaux interstadial in Hungary, is the merit of Veronika Gábori-Csánk. This short climatic period which is, however, important in the climate history of the Würm glaciation was delineated on the basis of sedimentological arguments. Later on this time span, completed with palaeontological and botanical data, evolve into a separate geochronological unit.
3. In the 1980s the concept of Ságvárian received archaeological meaning: the site Mogyorósbánya was found. Within the Late Upper Palaeolithic (LUP) a new culture could be separated: the Ságvárian. The eponym site is Ságvár-Lukasdomb. Its stratotype is Mogyorósbánya-Újfalusi dombok.
4. The absolute chronological framework of the Ságvárian is the existence of the Ságvár and the Mogyorósbánya settlements, respectively. According to the ^{14}C data it means the following (Dobosi 2009d) :

Mogyorósbánya:
Deb-1169: 19,930±300
Deb-9673: 19,000±250 (cal. 21,050-20,140)

Ságvár lower layer:
GrN-1783: 18,900±100

Ságvár upper layer:
GrN-1959: 17 760±350, cal. 19684(19220)18738

The appearance of the culture can be placed immediately following the Late Glacial Maximum. The existence of the culture, according to our current data, comprises two thousand years. The sites Ságvár and Mogyorósbánya illustrate a glimpse from the life of this culture.

The Ságvárian culture can be regarded as a successor of the Pavlovian (MUP) culture, contemporary to the Epigravettian culture. For the time being we cannot explain why the inhabitants of a closed and not very spacious territory (*i.e.*, habitable areas of the Carpathian Basin) reacted in two different ways on the challenges of the same environment. The geographical endowments, the climate, flora, fauna and the raw material sources were the same; nevertheless, the Ságvárian people adopted a more archaic - we can say, outdated - technology in the production of their stone tools, *i.e.*, pebble processing. They were operating in different size range, modified technique and types as a possible alternative for Upper Palaeolithic core technology.

Mogyorósbánya

This site is located on a high and steep loess plateau (currently at 190-210 m a.s.l.) rising over the right side of the Danube.

Between 1984 and 2009, nine excavations were performed here. The cultural layer is getting relatively thicker towards the ridge of the plateau, from its hitting the surface till 180-200 cm. Within the surrounding sediment, typical, high carbonate content loess the carbonate content is decreasing in the level of the cultural layer, corresponding to, probably, the „A" level of a fossil soil layer (Ruszkiczay-Rüdiger, in press). The slight soil formation indicates interstadial circumstances.

The number of artefacts located so far is close to seven thousand, among them, 20 % worked pieces and 8 % typeable tools (Table 3).

Types	**Number**
End-scrapers	110
Burins	179
Composite tool	1
Retouched blades	87
Truncated blades	24
Blunted blades	16
Shouldered	9
blades	340
points	8
Side-scrapers (on slice, flake, double)	24
cores	170
Pebble tools („chopper", slice, segment)	193
Flakes, waste	≈5000
Jewellery (Miocene shells)	68

Table 3. The Mogyorósbánya tool kit.

The typological appearance, type spectrum, technological features and size range of the industry uniformly reflect the choice of (pebble) raw material (Table 4).

Raw material	**pieces**	**%**
Silex	3493	73
Erratic flint	297	6
Radiolarite	299	6
Hornstone	19	+
Obsidian	200	5
Hydro-/ limnoquartzite	125	3
Quartzite	325	7
Rock crystal	1	+
Others	12	+

Table 4. Raw material composition at Mogyorósbánya

The most remarkable components in the raw material spectra are obsidian and rock crystal, due to the large distance from the sources. The „local" raw materials are radiolarite types from the Gerecse Mts. and quartzite pebbles collected from the gravel terraces.

Exotic objects

On the Palaeolithic sites (including Mogyorósbánya) we classify the following items to the exotic goods:

1. rare objects with practical use value: *e.g.*, rock crystal from the valleys of the Eastern Alps;
2. non-local objects obtained from the environment or from larger distances with seemingly no practical use, *e.g.*, coral and Ammonite fragments from the Mesozoic rocks of the Gerecse Mts., Nummulites from the neighbouring hill (called today "St. László coins"). The manuports are authenticated as archaeological finds by the authentic context of the site;
3. "trinket snails" - the ornate shells of mainly of Tertiary, *i.e.* fossil molluscs occur in certain number at most of the Upper Palaeolithic sites;
4. Mogyorósbánya is especially rich in red pigment. Collection and use of ochre is well documented in the Hungarian Palaeolithic since the Middle Palaeolithic period.

In the same chronological level of the Upper Palaeolithic we can observe an increase in the number of exotic elements: rock crystal, obsidian, ochre, "trinket snails" both at the 18-19 thousand years old Ságvárian and the 18-16 thousand years old Epigravettian settlements. A growing aesthetical taste for objects not directly necessary for subsistence, a more comfortable environment may indicate more free time that allowed to fullfil such needs.

The main games hunted were *Rangifer* and *Equus*.

The forerunners and possible descendants of the Ságvárian culture, its geographical distribution and system of contacts are still deficiently known. Based on the existing observations we can say that they fit well, together with the contemporary Younger Blade Industries (Epigravettian Culture) into the general lifestyle and subsistence model of the Gravettian Entity. Its seemingly special raw material procurement solutions are still without explanation.

According to current ^{14}C dates, for two thousand years this culture played a decisive role in the Carpathian Basin, sharing organic and inorganic resources with the population of the Younger Blade Industries (Epigravettian Culture).

Gravettian entity, Epigravettian

Romhány– Diós út

Topography

Romhány is situated along the NW-SE axis separating two members of the Northern Mid-Mountain Range, connecting the South Cserhát - Galga valley sites with the Ipoly valley, surrounding the mountains from the North. It could be a stopover for a possible route between the range of Upper Palaeolithic settlements and the main communication roads along the Northern and Southern sides of the mountains, respectively.

The southern route seems to be delineated more markedly. Along this stripe raw material from known geological sources was conveyed till Transdanubia and even further till the Moravian sites, from the Middle Palaeolithic till the end of the Ice Age.

The range of settlements involved start from the Southern end of the Tokaj-Presov Mts. After 50-60 kms patch of land without known sites we can find the caves of the southern margin of the Bükk mountains and open air sites along terraces and foot-hill slopes. On the Northern margin of the Mid-Mountain range, so far we do not know authentic settlements between the valley of the river Hernád and the Ipoly-bend. The river Ipoly (similar to the Danube) has a large bend turning South in the region of Hont where sites are concentrated again. The northern route has two likely continuations: straight to West along the Northern margin of the Small Hungarian Plain (Kisalföld: with a range of sites in Western Slovakia) and in the Danube valley.

The Cserhát Mts. is the smallest and lowest member of the Northern Mid-Mountain Range, with relatively low highest peaks at 4-500 m a.s.l. It is dissected by wide valleys. The plateaus and internal basins are located at 2-300 m a.s.l. Its varied orographical features, however, result in a mid-mountainous character.

In one of the small North-Western basins of the mountains, the environs of Romhány a smaller assemblage comprising only 290 items but varied in respect of types and raw materials.

No authenticating excavation was performed as yet.

Lithics

Tools: 23 (end-scrapers, blunted blades, rabot, burins, side-scraper, truncated and retouched blades, blade point)
Cores and core fragments: 8
Blades: 23
Flakes and fabrication debris: 243

Raw material

The attractions of the locality, apart from its topographical position, were probably enhanced by the availability of raw materials: hydrothermal siliceous rock outcrops of the western margin of the Galga-valley and various pebble deposits.

Hydro /limnoquartzite: 73 %; local raw material available in large quantities.
Radiolarite: 17 %: high quality raw material, homogeneous, fine grained, available in various colours, occasionally with silky or porcelainish lustre.
Nummulitic silex: originating from gravel resources of Miocene age.
Obsidian: 3 % from the well-known NE Hungarian- SE Slovakian sources.

Other raw materials represented with a few specimens include Prut flint, a classical "long distance" raw material present in smaller or greater quantities in the Hungarian raw material kit since the Upper Palaeolithic. The acme of its use is seemingly in the Epigravettian.

Cultural classification

From the Romhány type spectrum the specific eponym tool types are missing. The 23 morphological tool types are of general Upper Palaeolithic character. On the basis of finish, size and selection of raw material we assigned the site to the Younger Blade Industry phylum (Epigravettian) of the Gravettian Entity.

Acsa-Viszoki-hegy (Dobosi 2010)

One of the N-S direction watercourses dissecting the Northern Mid-Mountains is the stream Galga, currently with low water yield and heavily regulated. The study of the Palaeolithic period in the Galga-valley and the Eastern Cserhát in general took a sweeping moment recently. Several collecting spots are known from the environs of Acsa, conspicuous from the recently found Aurignacian open-air site (see above, Acsa-Rovnya).

The most abundant surface collecting point is on the Viszoki-hill, to the south of the village on a steep plateau of 276 m elevation a.s.l. The site is rich in raw material lumps and half-products, too. The high amount of typical tools, however, indicates a settlement of general function.

There was no excavation here as yet.

Tool kit

(Among 760 artefacts collected from here)
Tools: 33 (end-scrapers, burins, side scraper, truncated and retouched blades)
Cores and core fragments: 19
Blades: 53
Flakes and fabrication debris: 653 (mainly in the size range 20-50 mm)

Raw material

Hydro /limnoquartzite (local raw material): 89 %.
Radiolarite: 6,5 %; excellent quality raw material, homogeneous, used in great colour variety, with silky or porcelainish lustre. Among the primary geological sources those of NE Transdanubia are the closest (liver-brown reddish brown: Pisznice, brownish-grey, brownish-green marbly: Agostyán etc.)
Obsidian: 0,6 %; from the NE Hungarian- SE Slovakian sources.

The remaining few pieces are made of silex and quartzite pebbles and sandstone. Some pieces of the inferior quality local andesite were also observed.

Cultural classification

The characteristic *„fossile directeur"* types are missing from the Acsa-Viszoki hegy material. The 33 tools comprise general Upper Palaeolithic types and they are also inadequate for a statistical evaluation.
On the basis of the average length of the tools (35 mm), the core types and the raw material selection the site was assigned

to the Younger Blade Industry phylum (Epigravettian) of the Gravettian Entity. This is, however, contradicting to some end-scrapers made on High massive blades with trapeze cross section representing older types than the general character of the industry.

Raw materials research

In the past five years the investigation of non-metallic prehistoric raw materials is continued with the same intensity. Collection of lithic reference samples in the Lithotheca of the Hungarian National Museum was extended to all archaeological periods. Collecting activity and analyses (physical, chemical and petrographical studies) were continued with the help of several successful national and international research projects. Collaboration is coordinated, on the side of the HNM, by Katalin T. Biró. The incipient collection of archaeometrical data and reference materials is also curated by her and she is in charge of the editing of the periodical Archeometriai Műhely (Archaeometry Workshop; www.ace.hu/am, http://epa.oszk.hu), publishing regularly archaeometrical communications dealing with specific archaeological materials including some of interest to Upper Palaeolithic studies.

Ecology

The most important data for the reconstruction of the ecological endowments of the Palaeolithic period, including the Upper Palaeolithic, unfortunately, are not supplied by the archaeological excavations.

The natural scientific evidence encountered on the excavations proper is often deficient or simply missing. Biological remains embedded in, e.g., argillaceous sediments, even the most resistant dental enamel will often perish in the local (Ice Age?) conditions. The remaining evidence is always selective, and not only for taphonomical reasons. The primary sources of information are outcrops and boreholes established for sedimentological, botanical, geomorphological, paleontological and malacological purposes. The multidisciplinary team working in this type of research is supervised by P. Sümegi.

Research on large mammals as Upper Palaeolithic game is directed by I. Vörös
(HNM).

Institutions

The continuation of Hungarian Palaeolithic research, including the Upper Palaeolithic period is continuous due to the diligent work of young researchers. Palaeolithic research is practiced in the HNM (A. Markó) and in the framework of the Miskolc University (Á. Ringer, Gy. Lengyel). In the Archaeological Institute of the ELTE (Budapest.), Palaeolithic studies are taught by Zs.Mester. In regional museums, there are also some young colleagues working on Palaeolithic material, e.g., at Miskolc, (Herman Ottó Museum, P. Szolyák) and at Szécsény (Kubinyi Ferenc Museum, K. Zandler). University students and enthusiastic private collectors also help our work.

References

BÁCSKAY E. (2011) - Mikroszkópikus használati nyomok vizsgálata őskori pattintott kőeszközökön, magyarországi lelőhelyekről: eddig eredmények, lehetőségek, feladatok. In: *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 2011 1-296. [available http://mek. oszk. hu/09200/09253/]

BÉRES S. (2011) - Néhány adalék Dömös őskőkorához: Piroska-dűlő és Pattantyús. In: *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 2011 1-296. [available http://mek. oszk. hu/09200/09253/]

BILLER Za. (2009) - Epigravetti vadásztábor állatmaradványai Pilismarót-Bitócon [Archaeozoological remains from the epigravettian hunting-site of Pilismarót-Bitóc]. *Archaeologiai Értesítő* 134: 131-154.

BIRÓ K.T. (2006) - Carpathian Obsidians: Myth and reality. In: *Proceedings of the 34th International Symposium on Archaeometry*, 3-7 May 2004. E-book, http://www. dpz. es/ifc/libros/ebook2621. pdf - Zaragoza Institution Fernando el Catolico 2006 267-278.

BIRÓ K.T (2006) - Sources of Hungarian petroarchaeological information on the internet. In: Körlin, G. –Weisgerber, G. eds. 2006, Proceedings of the VIIIth Flint Symposium, *Anschnitt* 19: 483-488.

BIRÓ K.T. (2008) - Kőeszköz-nyersanyagok Magyarország területén. [Raw materials for stone tools in Hungary]. In: Szakáll S. (ed.), "Az ásványok és az ember a mai Magyarország területén a XVIII. század végéig". *Bányászat* 74: 11-38.

BIRÓ K.T. (2009) - Sourcing raw materials for chipped stone artifacts: the state-of-art in Hungary and the Carpathian Basin. In: Adams B. and Blades B. (ed.), *Lithic Materials and Palaeolithic Societies*. Oxford, Wiley & Blackwell Ltd, p. 47-53.

BIRÓ K.T. (2009) - Vittem, vettem, kaptam – loptam? Gondolatok a proveniencia vizsgálatok eredményeinek értelmezése köréből. [Carried, purchased, received – looted? Observations on the interpretation of provenance studies]. In: Ilon G. (ed.), ΜΩΜΟΣ 6 Szombathely 411-420.

BIRÓ K.T. (2009) - Lithic Raw Materials in Hungary: a diachronic presentation on recent advances in Hungarian petroarchaeology. In: Gancarski (ed.), Surowce naturalne w Karpatach oraz ich wykorzystanie w pradziejach i wczesnym średniowieczu - Krosno 23-40.

BIRÓ T.K. (2011) - Comparative raw material collections in support of petroarchaeological studies: an overview [Összehasonlító nyersanyaggyűjtemények a petroarcheológiai vizsgálatok szolgálatában: áttekintés]. In: *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 2011 1-296. [available http://mek. oszk. hu/09200/09253/225-244]

BIRÓ K.T. & MARKÓ A. (2007) - Stones 'Hit the Road'. In: Hoppál É. (ed.), "Endless Journey", *Budapest Hungarian National Museum*, p. 14-19.

BIRÓ K.T, DOBOSI V.T. & MARKÓ A. (2009) - Methods of lithic raw material characterisation and raw material origins in the Palaeolithic: state of art in Hungary. *BAR International Series* 1938: 111-122.

BIRÓ K.T., SZILÁGYI V. & KASZTOVSZKY Zs. (2009) - Új adatok a Kárpát-medence régészeti radiolarit forrásainak ismeretéhez [New data on the characterisation of radiolarite sources of the Carpathian Basin]. *Archeometriai Műhely* 6(3): 25-440.

BUDEK A. & KALICKI T. (2003-2004) - Sedimentological and micromorphological studies of T11 section at Andornaktálya. *Praehistoria* 4-5: 145-152.

DOBOSI V.T. (2006) - Report on the state of art of Upper Palaeolithic in Hungary. 2001-2005. *Le Paléolithique supérieur européen. Bilan quinquennal 2001-2006*. Liège,. ERAUL 115, p. 39-47.

DOBOSI V.T. (2006) - Lovas (Hungary) ochre mine reconsidered. In: *Stone Age-Mining Age*. Der Anschnitt, Beiheft 19. Bochum. 29-36.

DOBOSI V.T. (2006) - Gravetti lelőhelyek Pilismarót környékén. *Folia Archaeologica* LII: 21-48.

DOBOSI V.T. (2007) - On the edges of the plains. In: M. Kobusiewicz and J. Kabacinski (ed.), *Studies in the final palaeolithic settlement of the Great European Plain*. Poznan, p. 151-155.

DOBOSI V.T. (2007) - Fás vegetáció a felső paleolitikumban. Az erdő és a fa régészete és néprajza. Szerk. : Gömöri J. Sopron, 11-18.

DOBOSI V.T. (2008) - Acsa: new open air Aurignacian site in Hungary. In: Sulgostowska Z. and Tomaszewski J. (ed.), *Man – Millennia – Environment. Studies in honour of Romuald Schild*. Warsaw, p. 151-160.

DOBOSI V.T. (2009a) - Filling the void: lithic raw material utilization during the Hungarian Gravettian. In: Adams B. and Blades B. (ed.), *Lithic materials and Paleolithic Societies*. Wiley–Backwell Ltd., p. 116-126.

DOBOSI V.T. (2009b) - Constancy and change in Upper Palaeolithic, Hungary. In: Djindjian F., Kozłowski, J.K. and Bicho N. (ed), *Le concept de territoires dans le Paléolithique supérieur européen*. Oxford, BAR International Series 1938, p. 123-133.

DOBOSI V.T. (2009c) - Knochen, Zahn und Geweih im Paläolithikum In: J. Gancarski (ed.), *Surowcena naturalne w Karpatach oraz ich wykorzystanie w pradziejach i wczesnym średniowieczu*. Krosno, p. 273-286.

DOBOSI V.T. (2009d) - A hazai felső paleolitikum vázlata. Tisicum. A Jász-Nagykun-Szolnok Megyei Múzeumok Évkönyve XIX. Szolnok, p. 13-28.

DOBOSI V.T. (2009) - Ökologie des Jungpaläolithikums (ungarische Angaben). *Communicationes Arch. Hung*. 2009: 5-19.

DOBOSI V.T. (2010) – "…akkoriban ugyanis még paleolit régésznek készültem" ["…at that time I was supposed to be a Paleolithic researcher „] (Pál Patay). In: Guba Sz. and Tankó K. (ed.), *„Régről kell kezdenünk…" Studia Archaeologica in honorem Pauli Patay*. Szécsény, p. 11-21.

DOBOSI V.T. (2010) - Az állati eredetű nyersanyagok felhasználása az őskőkorban [The exploitation of Animal-derived Raw Materials in the Paleolithic]. In: Gömöri J. and Körösi A. (ed.), *Csont és bőr. Állati eredetű nyersanyagok feldolgozásának története, régészete, néprajza* [Bone and Leather. History, Archaeology and Ethnography of Crafts, Utilizing Raw Materials from Animals]. Budapest, p. 69-77.

DOBOSI V.T. (2010) - „Zum Feder – oder zum Schwert" Paläolithforschung in Ungarn und ihre Beziehung zur Urgeschichtsforschung in den deutschsprachigen Länders. *Mitteilungen der Gesellschaft für Urgeschichte*. Tübingen, Band 19, p. 117-125.

DOBOSI V.T. (2010) - Prut flint at the top: Esztergom-Gyurgyalag–Hungary. In: J. Gancarski (ed.), *Transkarpackie kontakty kulturowe w epoce kamienie, brązu i wczesnej epoce zelaza*. Krosno, p. 99-113.

DOBOSI V.T. (2011) - Obsidian use in the Palaeolithic in Hungary and adjoining areas. *Natural Resource Environment and Humans* [Tokyo, Meiji University] 1: 83-95.

KASZTOVSZKY Zs. & BIRÓ K.T. (2006) - Fingerprinting Carpathian Obsidians by PGAA: First results on geological and archaeological specimens. In: *Proceedings of the 34th International Symposium on Archaeometry*, 3-7 May 2004. E-book, http://www. dpz. es/ifc/libros/ebook2621. pdf - Zaragoza 301-308.

KASZTOVSZKY Zs., BIRÓ K.T., MARKÓ A. & DOBOSI V.T. (2008) - Cold neutron promt gamma activatioan analysis – a non-destructive method for characterization of high silica content chipped stone tools and raw materials. Blackwell Synergy, Oxford. *Archeometry* 50(1): 12-29.

KASZTOVSZKY Zs., BIRO K.T., MARKO A. & DOBOSI V.T. (2008) - Prompt gamma activation analysis for non-destructive characterization of chipped stone tools and raw materials. *Journal of Radioanalytical and Nuclear Chemistry* 278(2): 293-298.

KERTÉSZ R. & DEMETER O. (2011) - Adatok a dunántúli kora mezolitikum kőiparának nyersanyagvizsgálatához Szekszárd-Palánk. In: *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 1-296. [available http://mek. oszk. hu/09200/09253/]

KOZLOWSKI J.K. & MESTER Zs. (2003-2004) - Un nouveau site du Paléolithique superieur dans la region d'Eger (Nord-Est de la Hongrie). *Praehistoria* 4-5: 109-140.

KOZŁOWSKI J.K., MESTER Zs., ZANDLER K, BUDEK A., KALICKI T., MOSKAL M. & RINGER Á. (2009) - Le Paléolithique moyen et supérieur de la Hongrie du nord, nouvelles investigations dans la région d'Eger. *L'Anthropologie* 113: 399-453.

LENGYEL Gy. (2008-2010) - An aspect to the re-evaluation of Ságvár (Lyukas- domb) Upper Palaeolithic site. *Folia Archaeologica* LIV: 25-38.

LENGYEL Gy. (2009) - A ságvári felső paleolit telep és a Kárpát-medencei gravetti kőnyersanyagai. MΩMOΣ VI. Szombathely, p. 223-231.

LENGYEL Gy. (2011) - The pebble, the block and the tabular lithic raw material use at Ságvár, Lyukas-domb Upper Palaeolithic site. *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 2011 1-296. [http://mek. oszk. hu/09200/09253/]

LENGYEL Gy. & MESTER Zs. (2008) - A new look at the radiocarbon chronology of the Szeletian in Hungary. In: Jöris O. and Adler D. S. (ed.), Dating the Middle to Upper Palaeolithic boundary across Eurasia. Proceedings of Session C57, 15th UISPP Congress, Lisbon, Portugal, 2006. Setting the record straight: Toward a systematic chronological understanding of the Middle to Upper Palaeolithic boundary in Eurasia. *Eurasian Prehistory* 5(2): 73–83.

LENGYEL Gy., BÉRES S. & FODOR L. (2066) - New lithic evidence of the aurignacian in Hungary. *Eurasian Prehistory* 4(1-2): 83-89.

MARKÓ A. (2007) - The Upper Palaeolithic site at Szob. *Folia Archaeologica* LIII (Budapest): 7-22.

MARKÓ A. (2008-2010) - A little puzzle: Further studies on the Upper Palaeolithic assemblage of Szob. *Folia Archaeologica* LIV.

MARKÓ A. (2011) - Új szempontok a tarcali felső paleolitikus lelőhely értékelséhez. In: *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 2011, p. 225-44 [available http://mek. oszk. hu/09200/09253/225-244]

MARKÓ A., KASZTOVSZKY Z. & BIRÓ K.T. (2008) - PGA Analysis of Szeletian Felsitic Porphyry – Non-destructive Analysis of an Important Hungarian Palaeolithic Raw Material. In: Facorellis *et al.* (ed.), *BAR International Series* 1746, p. 407-412.

MESTER Zs. (2007) - Influences de la recherche préhistorique en France sur celle de la Hongrie. In : J. Évin (dir.), *Un siècle de construction du discours scientifique en Préhistoire. Vol. I : «Des idées d'hier...»*, XXVI[e] Congrès Préhistorique de France, Congrès du Centenaire de la Société préhistorique française (Avignon, 21-25 septembre 2004). Paris, Société préhistorique française, p. 259-266.

MESTER Zs. (2008) - Pour continuer les investigations sur les gisements classiques en Hongrie : les grottes Szeleta et d'Istállóskő. In : J. Évin (dir.), *Un siècle de construction du discours scientifique en Préhistoire. Vol. I : «Des idées d'hier...»*, XXVI[e] Congrès Préhistorique de France, Congrès du Centenaire de la Société préhistorique française (Avignon, 21-25 septembre 2004). Paris, Société préhistorique française, p. 239–248.

MESTER Zs. (2008) - Adaptation à l'environnement montagneux au Paléolithique en Hongrie. In: S. Grimaldi, T. Perrin et J. Guilaine (éd.), *Mountain environments in Prehistoric Europe. Settlement and mobility strategies from Palaeolithic to the early Bronze Age*, Proceedings of the XV UISPP World Congress (Lisbon,4-9 September 2006), vol. 26. BAR Int. Ser. 1885, p. 35-42.

MESTER Zs. (2009) - Nyersanyagbeszerzés és -feldolgozás egy felső paleolit telepen: Andornaktálya-Zúgó-dűlő. (Raw material acquisition and processing at an Upper Palaeolithic settlement: Andornaktálya–Zúgó-dűlő.) In: G. Ilon (ed.): MΩMOΣ VI. Proceedings of the 6th Meeting for the Researchers of Prehistory: "Raw Materials and Trade", Kőszeg (19-21 March), Szombathely, p. 239-254.

MESTER Zs. (2010) - Technological analysis of Szeletian bifacial points from Szeleta Cave (Hungary). In: L. Longo (ed.), Integrated methodological approaches to the study of lithic tools. *Human Evolution* (Firenze), 25(1-2): 107-123.

MESTER Zs. (2011) - A magyarországi középső és felső paleolitikum bifaciális levéleszközeinek technológiája. In: *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 2011 [available http://mek. oszk. hu/09200/09253/]

PRISKIN A. (2009) - A távolsági nyersanyagok felhasználása a kárpát-medencei felső paleolitikum kései időszakában - Employment of long distance raw materials in the Late Upper Palaeolithic of the Carpathian Basin. In: G. Ilon (ed.), MΩMOΣ VI. Proceedings of the 6th Meeting for the Researchers of Prehistory: "Raw Materials and Trade", Kőszeg (19-21 March), Szombathely, p. 311-320.

PRISKIN A. (2009) - Jászfelsőszentgyorgy-Szúnyogos and Székesdűlő: Issues of contemporaneity and chronology at two neighbouring Late Upper Palaeolithic sites in Northeast Hungary. *15th Annual Meeting of European Association of Archaeologists* (15-20 September 2009).

PRISKIN A. (2010) - *Jászfelsőszentgyörgy – Szúnyogos és Székes-dűlő felső paleolit lelőhelyek pattintott kőeszköz anyaga (tipológia és nyersanyag felhasználás) – Chipped Stone Artefacts from Jászfelsőszentgyörgy – Szúnyogos and Székes-dűlő Upper Palaeolithic Sites. Typology and Raw Material Utilisation*. University of Pécs, MA Thesis.

ROSANIA C.N., BOULANGER M.T., BIRÓ K.T., S. RYZHOV, G. TRNKA & GLASCOCK M.D. (2008) - Revisiting Carpathian obsidian. *Antiquity* 82: 318.

RUSZKICZAY-RÜDIGER Zs. (2011) - Mogyorósbánya, Újfalusi dombok Paleolit lelőhely szedimentológiai viszonyai Corolla museologica Tibor Kovács dedicata. *Magyar Nemzeti Múzeum* (in press).

SÜMEGI P. (2005) - Loess and Upper Paleolithic environment in Hungary. *Aurea Nagykovácsi*, p. 1-333.

SÜMEGI P. (2011) - Modeling the relationship of the Upper Palaeolithic communities and the environment of the Carpathian Basin during the Upper Würmian. In: *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 2011 [available http://mek. oszk. hu/09200/09253/]

TILLIER A.-M., MESTER Zs., HENRY-GAMBIER D., PAP I., RINGER Á. & GYENIS Gy. (2009) - The Middle-Upper Palaeolithic transition in Hungary : an anthropological perspective. In: V. Cabrera Valdés, F. Bernaldo de Quirós Guidotti and J.M. Maíllo Fernández (ed.), *En el Centenario de la Cueva de el Castillo: El ocaso de los Neandertales*. Santander, Centro Asociado a la Universidad Nacional de Educación a Distancia en Cantabria, p. 89-106.

TILLIER A.-M., MESTER Zs., BOCHERENS H., HENRY-GAMBIER D. & PAP I. (2009) - Direct dating of the "Gravettian" Balla child skeleton from Bükk Mountains (Hungary). Unexpected results. *Journal of Human Evolution*, 56: 209212.

ZANDLER K. (2006) - *Paleolit lelőhelyek Eger környékén*. ELTE, Thesis.

ZANDLER K. (2008) - Nyíltszíni paleolit lelőhely Erdőtarcsa-Daróci hegyen [Open-air palaeolithic site at Erdőtarcsa-Daróci hill]. *Nógrád megyei Múzeumok Évkönyve* 32: 46-66.

ZANDLER K. (2010) - Paleolit telep Hont-Csitáron. Palaeolithic site at Hont-Csitár. In: Sz. Guba and K. Tankó (ed.) „Régről kell kezdenünk…" *Studia Archaeologica in honorem Pauli Patay*. Szécsény, p. 23-49.

ZANDLER K. & BÉRES S. (2011) - Három nyíltszíni paleolit lelőhely revíziója: Bükkmogyorósd, Csokvaomány, Nekézseny [Revision of three open. -air palaeolithic site in the Bükk mountains, NE-Hungary]. In: K.T. Biró and A. Markó (ed.), *Emlékkönyv Violának. Tanulmányok T. Dobosi Viola tiszteletére* [Papers in honour of Viola T. Dobosi]. Budapest Magyar Nemzeti Múzeum 2011, p. 55-76 [available http://mek. oszk. hu/09200/09253/]