



Thematic review

Interdisciplinary Research on the Moravian Upper Palaeolithic in the New Millennium (2001–2013)

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ABSTRACT

A number of new works concerning the Moravian Upper Palaeolithic have appeared over the last thirteen years. This thematic review presents an overview of Upper Palaeolithic excavations conducted in the third millennium in Moravia and all major works on this topic. The review is structured chronologically, it begins with the Middle to Upper Palaeolithic transition (technocomplexes of Szeletian and Bohunician), continues with Early Upper Palaeolithic (Aurignacian) and Middle Upper Palaeolithic (Gravettian or Pavlovian) and ends with the Late Upper Palaeolithic (technocomplexes of Epigravettian and Magdalenian). The works which are not connected with any particular period, such as papers discussing raw materials, settlement strategies, regional overviews of the Palaeolithic settlement or synthesis, are mentioned in the last chapter. The main aim of this thematic review is to present recent results of research into the Moravian Upper Palaeolithic to a foreign audience.

1. Introduction

The aim of this paper is to review the interdisciplinary research on the Moravian Upper Palaeolithic between 2001 and 2013. It is primarily focused on the foreign audience since it has been partially reviewed already by M. Oliva (2006a; 2011) in the Czech language. In this paper I will try to summarise all the important excavations, research projects and submissions concerning this period in Moravia (Czech Republic). The review is divided into five parts. Four parts are devoted to the particular phases of the Upper Palaeolithic (the initial, early, middle and late phase) while the fifth part concerns a cross-section and thematic works and projects concerning the Upper Palaeolithic.

2. The Initial Upper Palaeolithic

The Initial Upper Palaeolithic (IUP) is the very first phase of the Upper Palaeolithic dated to the period between 47 and 39 ky BP cal (GI 9–12). Although a number of authors (e.g. Oliva 2006a; 2011) regard this phase as an integral part of the Early Upper Palaeolithic and other authors suggest

that just Levalloisian industries such as Bohunician should be regarded as IUP (Kuhn *et al.* 1999), the findings from this period (Bohunician and Szeletian technocomplexes) in Moravia differ profoundly from the findings from a later period (Aurignacian). Consequently, it makes sense in my view to define a separate phase called the Initial Upper Palaeolithic. This phase has attracted the attention of scholars all over Europe with Moravia being no exception. The arrival of anatomically modern humans (AMH) into Europe can be predicted during this period. Due, however, to poor bone preservation in the sediments dated to this phase, we are uncertain as to whether the primary technocomplexes of this time in Moravia (Szeletian and Bohunician) were created by the last Neanderthals or by the first AMH.

The main contribution to this period is in all probability a book of proceedings concerning the Palaeolithic sites on the top of Stránská skála hill in Brno – Slatina (Svoboda, Bar-Yosef, Eds. 2003). The results of the excavations conducted by the international team led by J. Svoboda and O. Bar-Yosef as well as the results of the excavations led by K. Valoch from the Moravian Museum in Brno are presented in this publication. The Aurignacian cultural layers were found in superposition over the layers with the Bohunician industry which established the relative chronological position of these two technocomplexes. The absolute AMS dates were obtained from both of these two cultural horizons. The

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tool typology from this site was described by J. Svoboda, while P. Škrđla devoted his contribution to the Bohunician technology. His analysis was based on a refitting of cores from the Bohunician layers. Use-wear analysis conducted by A. Šajnerová discovered use-wear traces of fur processing in the case of a number of the analysed tools. J. Svoboda and O. Bar-Yosef compared the Bohunician collection from Stránská skála hill with the lithics from the Boker Tachtit site in Israel and discovered numerous similarities. They consequently considered the possible south-eastern origin of the Bohunician. M. Oliva (2005) argued against this theory due to the presence of a number of attributes typical for the Szeletian (flat retouch, leaf points) in the majority of the Bohunician collections.

P. Škrđla and G. Tostevin conducted a rescue excavation at the type locality Brno – Bohunice – Kejbaly in 2002 (Škrđla, Tostevin 2005). The finding of a refitting of a flat retouched side scraper with a flake and the presence of bifacial thinning flakes (BTF) at the site demonstrated the presence of the flat retouch technique in the collection. P. Škrđla and G. Tostevin (2005) consequently argue that the leaf points and other flat retouched tools found here must have been made directly at this site. M. Oliva (2006a, 130; 2012) considers the possibility of the presence of Szeletian hunters at the Brno-Bohunice-Kejbaly site in light of the fact that the raw material composition at the Brno – Bohunice – Kejbaly site is dominated by the Stránská skála chert, whereas most of



Figure 1. Retouched Levallois point found at the Bohunician site Tvarožná X – Za Školou in 2008 (Škrđla *et al.* 2009, 20).

the flat retouched tools are made from various raw materials (primarily from the Krumlovský les type chert). This could not have been caused by the physical properties of the Stránská skála type chert, since the finding of a leaf point made from this raw material at the Brno – Líšeň – Čtvrtě surface site demonstrates that it was possible to manufacture flat retouched tools from the Stránská skála type chert without substantial problems (Nerudová, Přichystal 2001). The OSL, IRSL and TL dates obtained from the cultural layer at the Bohunice site by D. Richter are considerably higher than the AMS radiocarbon dates (Richter *et al.* 2008; 2009). This indicates the possibility of older dating of the Bohunician layers at this locality than was expected before.

Z. Nerudová's dissertation and papers have provided new insight into the differences between the Bohunician and the Szeletian technologies. Whereas P. Škrđla (2003a) has defined the specific Bohunician technology as a fusion of Upper Palaeolithic blade technology and Middle Palaeolithic Levallois technology, Z. Nerudová argues that the Levallois technology might have coexisted together with the blade technology in the Bohunician (2001a; 2001b; 2002a; 2002b; 2003).

Another excavation at the Bohunician settlement took place at the Tvarožná X – Za Školou site (Škrđla *et al.* 2009). This site was excavated in 2008 by an international team led by P. Škrđla and G. Tostevin. The estimated Bohunician classification of the collection was confirmed by the finding of a retouched Levallois point made from limnosilicite (Figure 1). The majority of the artefacts were made from the Stránská skála type chert which predominates over the Krumlovský les type chert. The bones and charcoal were unfortunately missing, therefore it was impossible to use AMS radiocarbon dating. OSL dating by D. Richter is still in progress. Another restricted excavation was carried out by the same team at the Líšeň VII – Hrubé Podsedky site (Škrđla *et al.* 2011b). A unique finding was a possibly pierced tertiary shell found in the Bohunician cultural layer which could be connected with modern behaviour.

P. Neruda and Z. Nerudová excavated the Moravský Krumlov IV multilayer locality situated at the outcrops of the Krumlovský les type chert between 2000 and 2004. In their view, the uppermost cultural layer can be assigned to the Szeletian (Neruda, Nerudová, Eds. 2009; Neruda, Nerudová 2010), whereas additional lower layers are from the Middle Palaeolithic age. The Szeletian age of the uppermost layer was confirmed by a series of dates ranging between 43 – 41 ky BP. The OSL dates range from 64 ky BP at the base of the uppermost archaeological horizon to 43 ky BP in the upper part of this layer, which suggest an earlier age than expected from the radiocarbon dates. L. Kaminská *et al.* (2012, 32) do not exclude the possible affiliation of this layer with the Middle Paleolithic Micoquian. The refitting of the lithics found in this layer demonstrated the prevalence of discoid and subprismatic flake technology. Bifacially retouched, often unfinished, artefacts predominate among the tools. Only one rib of a large mammal has been preserved from the faunal remains. The uppermost layer at

the Moravský Krumlov IV locality can be characterized as the primary workshop for leaf points manufacturing.

Another site from this period was excavated in Želeč (central Moravia) on the margin of the Ondratice I/Želeč surface site (more information about this surface site is available in a paper by Mlejnek *et al.* 2012). This rescue excavation was conducted by an international interdisciplinary team between 2010 and 2012 (Mlejnek *et al.* 2011; Mlejnek, Škradla 2012; Mlejnek, Škradla, in print). The main cultural layer could be connected with three hearths situated on the surface of the Miocene sand covered by Interpleniglacial soil sediment. The charcoal samples from the largest hearth have been dated to circa 40 ky BP. Two other features, containing charcoal and scarce lithics, were excavated nearby. The charcoal from these features yielded AMS radiocarbon dates ranging between 30 and 32 ky BP which could be related to the Aurignacian settlement in the surroundings.

P. Škradla excavated another Szeletian site – Želešice III – Hoynerhügel situated in the Brno region between 2010 and 2013 (Škradla *et al.* 2011a; Škradla *et al.* 2012). Three finding horizons containing lithic artefacts made predominantly from the Krumlovský les type chert and from the Stránská skála type chert could be distinguished. The AMS radiocarbon dating carried out on charcoal samples yielded dates of almost 38 ky BP (Kaminská *et al.* 2012, 33) and 42,5 ky BP (Škradla *et al.*, in print).

Additional analyses have been performed on surface collection from this period. M. Oliva (2004) analysed a collection from the Ondratice Ia site in central Moravia which seems to be similar to the collection from the Ondratice I/Želeč central site situated nearby (Mlejnek *et al.* 2012). Additional surface collections dated to this period in the surroundings (Prostějov and Vyškov regions) were described by O. Mlejnek in the frame of his dissertation (Mlejnek 2011b; Mlejnek 2013). Z. Nerudová (2006) published a paper devoted to surface collections with Bohunician and Aurignacian attributes from the Brno – Bílá hora and Brno – Podstránská sites. She evaluates these collections as homogenous which is rather problematic since the Aurignacien layers were found at the same spot in superposition over the Bohunician layers on the top of the neighbouring Stránská skála hill. Finally, L. Hladíková (2002) analysed a lithic collection from the Trboušany I site located in the Krumlovský les area.

Additional papers were devoted to the issue of the Szeletian. E. Foltyn (2003), P. Alsworth-Jones (2004) and J. Svoboda (2001a; 2004a; 2004b; 2005) discussed the question of the creators of the Szeletian industry, the extinction of the last Neanderthals and the arrival of AMH. Over the last twenty years it has become apparent that the Szeletian is not an unambiguously defined technocomplex, but rather a conglomerate of industries with flat retouched tools dating to various periods (Kaminská *et al.* 2012). After the questioning of the dating and the stratigraphic situation in the Szeleta cave in Hungary (Lengyel, Mester 2007), even the use of the term "Szeletian" has become problematic. In

contrast, however, K. Valoch (2012) reviewed the Szeletian occupation in Moravia and western Slovakia and defended the original concept of the Szeletian technocomplex. The question of the Initial Upper Palaeolithic industries and the relationships between them will undoubtedly be a crucial topic for research in the future.

3. The Early Upper Palaeolithic

The next phase of the Moravian Upper Palaeolithic following cold Heinrich event 4 (HE4) is connected with the Aurignacian technocomplex and can be dated to approximately between 39 and 31 ky BP cal. Research on this period in Moravia has recently been primarily focused on new analyses of earlier excavated artefacts and situations, although a few limited excavations have been conducted as well.

P. Škradla published the results of a rescue excavation in the Napajedla – Zámoraví brickyard (eastern Moravia) where a redeposited archaeological horizon containing charcoal and lithic artefacts was documented (Škradla *et al.* 2005b; 2006; Škradla 2007). The settlement remains were found in a secondary position since the entire sediment block containing the cultural layer slid down from a higher altitude. The artefacts were primarily made from erratic flint



Figure 2. A pierced shell of a tertiary mollusk found in the Aurignacian cultural layer at the Lišeň I – Čtvrtě site in 2009 (Škradla *et al.* 2010, 274).

and radiolarite and included certain Aurignacian tool types such as carinated and nosed endscrapers. Charcoal samples were dated by AMS to the interval from 29 820 to 32 540 BP (Škrdla 2009, 113).

An additional limited archaeological excavation was conducted on the border of surface site Brno – Líšeň I – Čtvrtě (Škrdla *et al.* 2010). The artefacts were deposited in one cultural layer dated by AMS to 31,300 BP. The majority of them were made from the Stránská skála type chert. A pierced shell of a tertiary gastropod *Pirenella picta* (Figure 2) is a unique find which might have served as part of a pendant. It is the oldest find of an intentionally pierced shell in Moravia (Škrdla *et al.*, 2010, 270, 274).

Valoch and Karásek (2010, 57) and later Nerudová *et al.* (2012) have informed about the presence of porcellanite from eastern Bohemia (Kunětická hora near Pardubice) in the lithic assemblage from older excavations in the Pod hradem cave (Blansko district), which was confirmed by recent excavation conducted by an international team led by L. Nejman (Nejman 2012). During this excavation, two leaf

points in all probability from the Initial Upper Palaeolithic age and one younger tiny bone bead were discovered. Samples from various scientific analyses were taken during this excavation (Nejman *et al.* 2013).

A number of scholars focused on old finds of human and animal bones and bone artefacts in the most renowned Moravian Aurignacian site in the Mladeč caves. Svoboda *et al.* (2002, 2004) tried to date sinter sediments which should have covered the human skulls found here with the result being circa 34–35 ky BP. Direct dates from the skulls obtained in the Vienna dating laboratory (Wild *et al.* 2005) are younger, however (circa 31 ky BP). Since the human remains from Crô-Magnon and Vogelherd had been demonstrated to be of a younger age, the Mladeč caves have become the only site where the Aurignacian artefacts (bone points of the Mladeč type) and AMH remains have been found together. Unfinished scientific discussion has continued concerning the origin of the human remains found in the Hall of Dead bodies (Dóm mrtvých). While J. Svoboda (2001b; 2002; 2006) argues that the bones found



Figure 3. Radiolarite lithic industry from the Aurignacian site Tvarožná I – Nová pole (Mlejnek 2010, 20).

their way into the cave through a chimney, M. Oliva (2003b; 2005; 2006b) disagrees since the sediment column under the chimney only contained Lower and Middle Pleistocene faunal remains and because the finding point for the human bones and this column were separated by a small abyss. The history of all the archaeological excavations is summarised in the collective monograph edited by M. Teschler-Nicola (2006), which also contains anthropological analyses of the human bones deposited in the Natural History Museum in Vienna.

Since the Aurignacian is the most common Palaeolithic technocomplex present at the surface sites, numerous papers have been devoted to the Aurignacian surface lithic collections. L. Vitošová-Pěluchová (2009) analysed lithic collections from the Kroměříž area (2009), O. Mlejnek published analyses of new collections from the Tvarožná I – Nová pole site (Figure 3; Mlejnek 2010), Vítovice I – Záhumenní (2012) and from the Epiaurignacian sites in central Moravia (2008) and R. Jelínková (2005) analysed a lithic collection from the atypical surface site Lhota u Lipníka. Additional analysed Aurignacian collections come from the eastern Moravian sites of Buchlovice – Poviná (Škrdla, Přichystal 2003), Přestavlký (Drechsler, Svoboda, Schenk 2002) and Pavlovce (Nerudová, Homolka 2004). P. Škrdla analysed numerous surface Aurignacian collections from Moravian Slovakia (Škrdla 2010; 2011). The chronological position of the lithic collection from the Černotín – Malá Kobylanka site is uncertain (Kostrun, Neruda 2002).

M. Oliva (2008, 23) published a new AMS date from the Aurignacian stratified site Vedrovice Ia – 25170 ± 130 BP which supports the theory concerning the coexistence of the Aurignacian in peripheries with the Gravettian in central regions in the environs of major rivers. However, the ESR date from a horse tooth from the same site is considerably higher – $36\,000 \pm 2000$ BP (Grün, Nejman – Canberra lab; Oliva 2011, 13).

4. The Middle Upper Palaeolithic

Research on the Middle Upper Palaeolithic in Moravia is connected with the Gravettian technocomplex. M. Oliva published a review of the Gravettian occupation of the Moravian Karst (2002a) and of other smaller regions in Moravia (2003a) where he also presented a find of a depot of stone pierced circles from Jiřice (Znojmo district). In his published dissertation he summarised the Gravettian settlement in Moravia (Oliva 2007a). In this monograph he primarily focused his attention on a revision of the settlement structures described in older publications, on lithic industry analyses and on the relationships between used raw materials, technology and typology. The Mikulov symposium in 2002 was also devoted to the issue of the Gravettian in Central Europe (Svoboda, Sedláčková, Eds. 2004). J. Svoboda (2004c) summarised the state of knowledge of the Pavlovian at this symposium.

P. Škrdla (2005) published the results of his project focused on the Gravettian settlement on the middle course of the Morava River (Uherské Hradiště region). Within the framework of this project he excavated the Gravettian sites of Jarošov-Podvršťa (Škrdla 2001; 2002b; 2003b; 2004a; 2005), Spytiňev-Duchonce (Škrdla, Nývlťová Fišáková 2003; Škrdla *et al.* 2005a; Škrdla *et al.* 2008) and Boršice-Chrástka (Škrdla *et al.* 2007; 2008). During this project P. Škrdla analysed also numerous surface sites in this area (Škrdla *et al.* 2008).

A number of recently published studies have been devoted to the Dolní Věstonice – Pavlov settlement cluster. J. Svoboda edited a new volume of proceedings analysing the results of B. Klíma's excavations at the Pavlov I site (Svoboda, Ed. 2005). The horizontal distribution of the artefacts was complicated by the fact that the particular layers were not properly distinguished in the old documentation (Novák 2005). All together more than 200,000 lithic artefacts were found in this site sector (Verpoorte 2005, 75). Of particular interest is a new interpretation of bone spatulas found here which might have served as blunt points for hunting fur game (Brühl 2005; Brühl, Svoboda 2003). M. Zelinková (2007) analysed the bone and antler industry from older excavations at the Dolní Věstonice I site.

Apart from several minor rescue excavations in the Dolní Věstonice – Pavlov area (e.g. Svoboda *et al.* 2010a; 2011b), two new sites were discovered and excavated here.

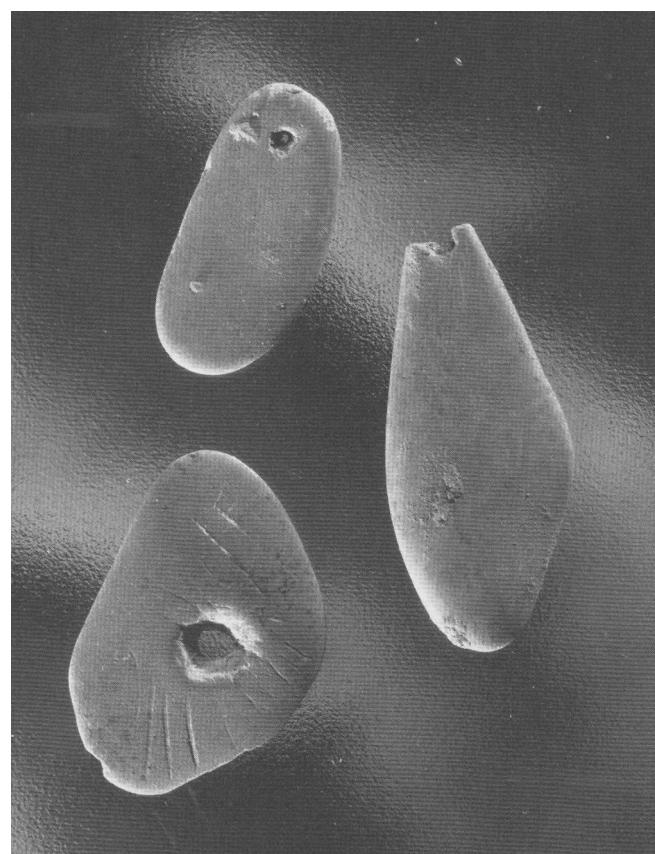


Figure 4. Pierced pebbles, perhaps parts of a pendant, found at the Pavlovian site Pavlov VI in 2007 (Svoboda *et al.* 2008, 253, photograph by M. Frouz).

The Pavlov VI site, which was interpreted as a Pavlovian living unit, yielded a rich collection of lithic artefacts, animal bones, pieces of baked clay and pierced pebbles with engravings (Figure 4; Svoboda *et al.* 2008; 2009). M. Králík and M. Nývlťová Fišáková were able to recognise certain finger and animal hairs imprints in the baked clay pieces found at this site (Králík *et al.* 2008). Another Pavlovian site in this microregion was accidentally discovered after a road in the centre of Milovice collapsed into a medieval cellar. The excavation in this collapsed cellar was somewhat problematic due to a lack of room and fresh air. This site named Milovice IV yielded a collection of lithic tools made primarily of erratic flint and radiolarite, numerous animal bones, fragments of ivory points, pierced shells of tertiary molluscs and small pieces of burnt clay (Svoboda *et al.* 2010b; 2011c). In contrast to additional Pavlovian sites in the microregion, Milovice IV is situated at a lower elevation at the bottom of a side-valley near a river floodplain. The moister environment is partially reflected in the faunal composition (Svoboda *et al.* 2011a). Another rescue excavation was conducted by the same team at the Dolní Věstonice IIa in last two years. Publication of findings is in preparation (Svoboda *et al.*, in print).

M. Oliva published the results of his excavation of the Milovice I site which was excavated in the 1980s (Oliva, Ed. 2009). This site is of interest due to the presence of mammoth bone settlement structures in the Gravettian layers and due to a superposition of the Gravettian layers over the Aurignacian ones. Unfortunately, the final publication of the Aurignacian layers from this site is still lacking. M. Oliva tried to explain the deposits of mammoth bones present at the Milovice I site and also at other Pavlovian sites as ritual deposits. Another possibility is that these deposits could be explained as killing and butchering locales (Brugère *et al.* 2009). The hypothesis that these deposits came from mammoths which died naturally in swamps (Péan 2001) has been excluded by the stratigraphic evidence.

An interdisciplinary team led by J. Svoboda excavated a restricted area near the cemetery wall at the Přerov – Předmostí Ib site. This rescue excavation preceded the construction of the memorial to mammoth hunters at this place (Svoboda *et al.* 2007). A number of the excavated lithic artefacts and animal bones were left *in situ* at the site as part of this memorial. The artefact and animal bones analyses from the excavation at the Předmostí II site in 1992 were published in the Archeologické rozhledy journal (Nývlťová, Fišáková 2001; Svoboda 2001c). New attention has been paid to the mass burial excavated by K. J. Maška in 1894 at Předmostí I. M. Oliva (2001; 2002b) interpreted this grave as a secondary deposit of human bones, whereas J. Svoboda (2001d) published Maška's drawing of one part of this grave with the ribs in an anatomical order, which indicates that at least parts of the bodies had to have been deposited in this grave before they became completely decomposed. The results of the new analyses of the old documentation of the human bones from Předmostí were published in a collective monograph edited by J. Velemínská and J. Brůžek

(2008). Apart from the anthropological description of the findings based on J. Matiegka's photodocumentation of glass plate negatives from the 1930s, this book also contains the palaeoenvironmental (Musil 2008) and archaeological (Svoboda 2008a; 2008b) context of these finds.

J. Svoboda *et al.* continued with excavations at the Ostrava – Petřkovice I site which has been dated to the younger phase of the Gravettian (Svoboda, ed. 2008). This site is situated in Czech Silesia at Landek hill near the Moravian borders.

A number of papers have been devoted to the issue of the ceramics (burnt clay) found at the Pavlovian sites (Soffer, Vandiver 2005; Bougard 2010). M. Králík has primarily studied the fingerprints and other imprints in the ceramic pieces (e.g. Králík *et al.* 2008). The majority of the fingerprints, in his view, belong to children and youngsters (Králík, Novotný 2005). A fingerprint of a *circa* ten year old child was even found on the black Venus of Dolní Věstonice I (Králík *et al.* 2002). Additional studies have been focused on the imprints of cloths in the Pavlovian ceramics (Adovasio *et al.* 2005). K. Valoch (2007) took a critical stand against the existence of clothes in the Pavlovian which provoked a critical response by O. Soffer and J. Adovasio (2007).

Additional papers have been devoted to the Gravettian female depictions. S. Wolf (2008a; 2008b) introduced a new female sculpture from Dolní Věstonice I which was found in the depository of RGZM in Mainz. K. Valoch (2008) has suggested, however, that this new Venus could actually be a falsification. Another recently discovered female depiction from Předmostí I was found in the collections of R. de Saint-Périer (d'Errico *et al.* 2011). This engraving is reminiscent of the renowned geometric Venus found at the Předmostí I site by M. Kříž. An interesting discovery was made by A. Přichystal (Binstéder *et al.* 2008) who has stated that the Venus of Willendorf could have been made of Jurassic limestone from the Stránská skála hill.

Gravettian (and particularly its earlier phase Pavlovian) is the most renowned and most discussed of all Moravian Palaeolithic technocomplexes. It was consequently not possible to mention all the research works devoted to this topic in the new millennium. References to additional papers concerning this issue can be found in the above-mentioned works.

5. The Late Upper Palaeolithic

The Late Upper Palaeolithic is the period of the last pleniglacial and the late glacial. During the last pleniglacial, Moravia was occupied by a small group of Epigravettian hunters which were replaced by Magdalenian hunters at the end of last glacial. J. Svoboda and M. Novák (2004) summarised the occupation of eastern central Europe during the last pleniglacial and suggested the term kašovian instead of epigravettian which has not been generally accepted.

Z. Nerudová and P. Neruda carried out a rescue excavation in Brno – Štýřice on Vídenská Street at the site of the former excavation by K. Valoch (Nerudová *et al.* 2012; Nerudová,



Figure 5. Mammoth mandible (*Mammuthus primigenius*) found at the Epigravettian site Brno – Štýřice III, Vídeňská street in 2009 (Nerudová *et al.* 2012, 616).

Neruda 2010; Nerudová 2012). They were able to distinguish two main concentrations of lithic artefacts and animal bones (Figure 5). The lower concentration (III) was determined as Epigravettian and should be older than the site artefact cluster located higher in a slope (IIIa) which was classified as Magdalenian. Z. Nerudová (2010) published new results of analysis of old J. Skutil's finds from 1929 at the nearby situated Epigravettian site in Kamenná Street and P. Škrđla presented results of his excavation at another Epigravettian site in the area of Hospital of Merciful Brothers in the Vídeňská street (Škrđla *et al.* 2005).

P. Škrđla began a rescue excavation at the Late Upper Palaeolithic site Mohelno – Plevovce, which is periodically flooded by the Mohelno water reservoir, last year (Škrđla

et al. 2012; Škrđla *et al.*, in print). He managed to unearth settlement structures consisting of a stone pavement which was dated to 19,500–19,900 BP cal (Figure 6). According to P. Škrđla, at least two different chronological horizons can be distinguished at this site. The older horizon (Epigravettian or Epiaurigancian) is connected with the unearthed stone structures while the younger horizon is similar to the Epigravettian at the Brno – Štýřice, Vídeňská street site (Škrđla *et al.*, in print). The surface finds from Prace (Simandl, Škrđla 2002) and Pohořelice (Škrđla 2004b) could also be classified as Epigravettian.

The limited excavations of the Magdalenian layers were carried out in Loštice (Neruda, Nerudová 2008; Neruda *et al.* 2009) and in Přerov (Škrđla *et al.* 2008). Although any new lithic artefacts were found during a rescue excavation at the Balcarka cave near Ostrov u Macochy, older finds excavated by J. Knies were analysed (Nerudová, Ed. 2010; Nývltová Fišáková *et al.* 2011).

Significantly more work has been carried out on material from older excavations at Moravian Magdalenian sites. A number of older excavations led by J. Skutil and B. Klíma were published, for example, in a book of proceedings entitled Prehistoric Caves (Svoboda, Ed. 2002). K. Valoch (2002a) contributed to this volume with an analysis of finds from an excavation in front of the Ochozská Cave. P. Škrđla (2002a) analysed a Magdalenian settlement structure and possible hunting strategies in the Moravian Karst. Perhaps the most useful submission in this volume is a list of caves with Palaeolithic finds (Valoch, Svoboda, Balák 2002). S. Voláková and M. Galetová continued with analyses of lithic artefacts, bones, antler and art from the Pekárna Cave (Voláková 2001; 2005; Lázníčková-Gonyševová 2002). P. Neruda and P. Kostrhun (2002) published a Magdalenian lithic collection with abundant retouched triangles and dihedral burins from the Hranice – Velká Kobylanka surface site. A review paper about the Moravian Magdalenian was

Figure 6. Stone structure 1 interpreted as a settlement unit excavated at the Epigravettian site Mohelno – Plevovce in 2013 (Škrđla *et al.*, in print).



published by K. Valoch (2001). Charcoal drawings on a cave wall in the southern branch of the Býčí skála cave situated near a Magdalenian site yielded Aeneolithic (grid symbols) and Medieval (a deer) AMS radiocarbon dates (Svoboda *et al.* 2005). A submission on the chronology of the Moravian Magdalenian was published by K. Valoch and P. Neruda (2005).

6. General issues

J. Svoboda *et al.* (2002) prepared an updated version of a volume entitled The Palaeolithic of Moravia and Silesia from general overviews of the Moravian Palaeolithic. Scholars from the Moravian Museum prepared a new permanent exhibition of the Moravian Palaeolithic and Mesolithic in the Anthropos Pavilion in Brno in 2005. Upon this occasion M. Oliva (2005) prepared a guide to this exhibition which was published in a Czech and English version. Regrettably only limited results are available from a project funded by the Grant Agency of the Czech Republic entitled A Compendium of the Bohemian and Moravian Palaeolithic and Mesolithic. This project led by K. Valoch between 2003 and 2005 unfortunately ended without the publication of any final volume.

A. Přichystal (2009) published an overview of the lithic raw material used in a prehistory of the eastern part of Central Europe. Unfortunately, the long-awaited English version of this monograph is still not available. Additional works devoted to the issue of raw materials and their distribution in the Moravian Palaeolithic were published *e. g.* by K. Valoch (2002b – Moravian Jurassic cherts; 2004 – distribution of rock crystal), M. Vokáč (2004 – raw materials of south-western Moravia) and M. Oliva (2003 – chert of the

Krumlovský les type).

R. Musil has attempted to reconstruct the environment of the Palaeolithic hunters from other general issues through analyses of faunal remains (2002; 2005) while P. Kostrhun has published a series of papers devoted to the history of research on the Moravian Palaeolithic (Kostrhun 2003; 2008; Oliva, Kostrhun 2009).

Numerous new regional overviews of Palaeolithic settlement and works focused on settlement strategies have been published recently. M. Oliva (2007) and Z. Nerudová (2008) have focused on the region of the Krumlovský les and its surroundings (Figure 7). After presenting an overview of the Palaeolithic settlement of the Uherské Hradiště region (Škrdlá 2003b; 2005; 2010; 2011), P. Škrdlá turned his attention to the surroundings of Ořechov (Škrdlá *et al.* 2011), Ivančice (Škrdlá 2012) and Mohelno (Škrdlá *et al.* 2012). O. Mlejnek analysed the settlement strategies of Palaeolithic hunters in the Brno and Vyškov regions (2011a) and later shifted his attention to the Palaeolithic settlement of the Prostějov region (2011b; 2013). L. Vitošová Pěluchová finally analysed the Palaeolithic settlement structure in the Kroměříž region (Pěluchová Vitošová 2009). M. Oliva has also paid attention to cultural – geographic analyses and the concept of territoriality in the Moravian Upper Palaeolithic (Oliva 2007b; 2009).

7. Conclusion

This thematic review has presented the results of interdisciplinary research on the Upper Palaeolithic period in Moravia (Czech Republic). It is apparent that the quantity of papers focused on this topic has increased in the new millennium as compared to previous years. Additionally, the



Figure 7: Krumlovský les – a source area of the Krumlovský les type chert and region with a dense Palaeolithic occupation (Oliva 2008).

number of scholars with an interest in this period in Moravia has increased slightly although the number of scientific posts for applicants interested in this topic at research institutions has remained more or less the same for the last twenty years.

The primary attention has been traditionally paid to the most celebrated Moravian Palaeolithic culture Pavlovian and also to the Middle to Upper Palaeolithic transition with technocomplexes of Bohunician and Szeletian. A number of papers have recently also been focused on the issue of the last glacial maximum and settlement strategies. Additionally, numerous recently published regional and micoregional overviews of Palaeolithic settlement have played an important role in the cognition of this period in Central Europe. In contrast, however, a number of undoubtedly interesting and important themes of the Moravian Upper Palaeolithic, such as Magdalenian or Aurignacian settlement, have remained somewhat side issues in recent years.

The majority of the work has been carried out at two major institutions, these being the Archaeological Institute of the Academy of Sciences of the Czech Republic in Brno and the Anthropos Institute of the Moravian Museum. Additional research in this field has also been carried out at Masaryk University (the Institute of Archaeology and Museology, the Institute of Anthropology and the Institute of Geology), although the Moravian Upper Palaeolithic unfortunately does not rank among the primary research interests of this institution. Also worth mentioning is the fact that numerous works by foreign scholars have shown an interest in the important and numerous Upper Palaeolithic sites in Moravia. This is somewhat ironic since the papers about the Moravian Upper Palaeolithic written by foreign authors often receive more publicity abroad than the works by Moravian authors, who are usually better acquainted with the local environment, sites and findings. This could be caused by a language barrier or also by a certain isolation of the scientific milieu in the former eastern bloc which resides from the past. It is therefore important to present the results of local scholars abroad, this being the primary aim of this thematic review.

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This paper is dedicated to the memory of the Moravian prehistorian Karel Valoch (1920–2013).

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