

Abstract book

13. - 15. 9. 2023, Mikulov Castle





FRJ3 Institute of Archaeology Czech Acad Sci, Brno



Mikulov Anthropology Meeting III

Abstract book

13. – 15. 9. 2023, Mikulov castle

Soňa Boriová & Ondřej Herčík (eds.)

Organizers:

Soňa Boriová Ondřej Herčík Dominik Chlachula Martin Novák Sandra Sázelová Petr Škrdla

Illustrations:

Michaela Chlachulová

Institute of Archaeology Czech Academy of Sciences, Brno Brno 2023

CONFERENCE PROGRAMME

WEDNESDAY 13.9.

7.45 – 8.45 registration of participants

8.45 – 9.00 official opening of the conference

SESSION I 9.00 - 10.20

Beran-Cimbůrková Petra: Anthropological analysis of skeletal remains found in a circular ditch (Middle Bronze Age) in Nymburk (Central Bohemia)

Varadzinová Lenka, Varadzin Ladislav: Burial traditions in late Pleistocene and early Holocene Northeast Africa: a comparative view

Varadzin Ladislav, Varadzinová Lenka, Ambrose Stanley H., Hamdeen Hamad Mohamed, Hošek Jan, McCool Jon-Paul, Juřičková Lucie, Pokorná Adéla: Cultural adaptations in the Sahelian hinterlands during African Humid Period. Insights from Jebel Shaqadud, Sudan

Kapustka Katarína, Koštová Nikola, Kovačiková Lenka, Zazvonilová Eliška: New insights in to the record of Magdalenian site of Hostim

COFFEE BREAK 10.20 – 10.40

SESSION II 10.40 - 12.00

John Robin, Maier Andreas: Morphological trends in early shouldered points assembladges in Central and Eastern Europe

Fojtová Martina, Galuška Luděk: New finds at a well-known site. Anthropological analysis of skeletons from several overlooked graves from Staré Město – "Na Valách"

Carracedo-Recasens Robert, García-Piquer Albert, Estévez-Escalera Jordi, Vila-Mitjà Assumpció: Yes we can: A Social-Archaeology Approach to prehistoric Hunter-Fisher Gatherer societies through Ethnoarchaeology

Kulakovska Larissa, Usyk Vitaly: The early Gravettian of Mezhihirtsy I site (Ukraine). Traces of Pavlovian culture at Dniester Valley

LUNCH BREAK 12.00 – 14.00

SESSION III 14.00 - 15.20

Moník Martin, Nerudová Zdeňka, Pluháček Tomáš, Součková Jitka: Reconstructing Upper Palaeolithic mobility through provenancing radiolarite artefacts

Bugajska Karolina: Loose human bones as evidence of the multi-step burial rite. Case study of the Stone Age hunter-gatherer sites at Dudka and Szczepanki, Masuria (NE-Poland)

Gomahr Lorenz, Portschy Jennifer: The early medieval burial site of Pucking: New insights into cultural connections between Bavaria and Avaria

Demay Laëtitia, Kulakovska Larissa, Bobak Dariusz, Usyk Vitaly, Kononenko Olesia, Połtowicz-Bobak Marta, Łanczont Maria, Mroczek Przemysław, Standzikowski Karol, Nadachowski Adam, Lemanik Anna: The Late Gravettian hunter-gatherer camp at Doroshivtsi III and the significance of the Middle Dniester Valley (Western Ukraine) for settlement during the LGM period

COFFEE BREAK 15.20 – 15.40

SESSION IV 15.40 - 17.00

Pasda Kerstin, Pfeifer Sebastian, Reiss Lilian, Buchinger Norbert, Einwögerer Thomas, Händel Marc, Lücke Andreas, Maier Andreas, Wissel Hogler, Mayr Christoph: Paleolithic survival strategies of Epigravettian hunter-gatherers at Kammern-Grubgraben: increased use of fur as sign of adaptation to a cold environment

Pokorný Petr, Šída Petr, Abraham Vojtěch: Human impact on Czech sandstone areas as seen through pollen diagrams

Tvrdý Zdeněk, Bedáňová Alžběta, Drtikolová Kaupová Sylva, Jarošová Ivana, Brzobohatá Kristýna: Multidisciplinary analysis of Bell Beaker cemetery in Popůvky

Wojtal Piotr, Wilczyński Jarosław: Man and woolly mammoth at the Kraków Spadzista – taphonomy of the site

MIKULOV CASTLE TOUR 18.00

THURSDAY 14.9.

SESSION V 8.00 - 9.20

Chlachula Dominik, Pia Maiorano Maria, Beshkani Amir, Rose Jeffrey, Usyk Vitaly, Štefanisko Denis, Garba Roman: Lithic assemblages of Duqm, Central Oman

Čechák Petr, Šída Petr, Pacák Marek: Palaeolithic bifacial artefacts from Eastern Bohemia

Leplongeon Alice, Unger Jiří, Varadzinová Lenka, Varadzin Ladislav: Stone Age occupation of Jebel Shaqadud, Central Sudan: preliminary results from the 2023 field season of the Shaqadud Archaeological Project

Neruda Petr, Nerudová Zdeňka, Kmošek Matěj, Lisá Lenka, Vaněček Zdeněk, Doláková Nela, Přichystal Antonín, Pyżewicz Katarzyna, Moska Piotr, Goszłar Tomasz, Světlík Ivo: A new animal engraving from Hošťálkovice II – Hladový vrch (Ostrava, Czech Republic) – the Magdalenian Horizon AH3

COFFEE BREAK 9.20 – 9.40

SESSION VI 9.40 - 11.00

Gumński Witold: The late Pleistocene and early Holocene history of Lake Staświn, Masuria, NE Poland, and the hunter-gatherer settlement in the light of stratigraphy and chronology

Hájek Filip: 4D visualization of an archaeological site. Preliminary results from the Upper Paleolithic site of Milovice IV, Czech Republic

Jurda Mikoláš: The dawn of the long-term research on the dynamics of Anabaptist communities in Moravia in the 16th and 17th centuries

Anghelinu Mircea, Händel Marc, Vereș Daniel, Hambach Ulrich, Lehmkuhl Frank, Ciornei Alexandru, Demay Laëtitia, Murătoreanu George: Why There? An overview of the Upper Paleolithic in the Eastern Romanian Carpathians

LUNCH BREAK 11.00 – 13.00

SESSION VII 13.00 - 14.20

Mlejnek Ondřej, Oliva Martin, Nývltová Fišáková Miriam, Lisá Lenka, Bajer Aleš: History of research of the Švédův stůl cave in the Moravian Karst

Škrdla Petr, Bartík Jaroslav, Augustinová Klára, Rychatříková Tereza, Demidenko Yuri E., Světlík Ivo, Nejman Ladislav: LGM and LG site Mohelno - Plevovce: Current state of the art Usyk Vitaly, Garba Roman, Gerasimenko Natalia, Nigst Philip: The Gravettian in Transcarpathian Ukraine: new evidence from the multi-layered open-air site Korolevo II

Nemergut Adrian, Soják Marián, Popovičová Lucia: Early Holocene occupation of caves and rock shelters in Ružín - preliminary results of new excavation

COFFEE BREAK 14.20 – 14.40

SESSION VIII 14.40 - 16.00

Parow-Souchon Hannah, Einwögerer Thomas, Händel Marc, Buchinger Norbert: 3D Modelling of a possible meat cache of Kammern-Grubgraben

Žaár Ondrej, Žaárová Ľubica: On the issue of the occurrence of leaf points in Southwestern Slovakia

Kaudela Veronika: The adornments of the Gravettian site Krems-Wachtberg in chronological and techno-cultural context

Händel Marc, Anghelinu Miracea, Buchinger Norbert, Ciornei Alexandru, Brandl Michael: "Follow the river!" – "Really?" What lithic raw material provenance studies can tell us about Upper Palaeolithic mobility patterns and land-use

18.30 – Invited lecture by Jiří Svoboda: Interdisciplinary approaches to the past: Case of the Czech Paleolithic

19.30 – 20.00 official opening of the social evening

FRIDAY 15. 9.

EXCURSION

8.30 - scheduled departure from Mikulov - bus stop 22. Dubna

- 1st stop: Brno, Stránská skála
- 2nd stop: lunch in Ochoz
- 3rd stop: Moravian Karst, Pekárna and Švédův stůl caves

17.00-18.00 – expected arrival to Mikulov

(Detailed time schedule may slightly vary due to traffic)



Location of the bus stop

WEDNESDAY 13. 9. 2023

SESSION I



Anthropological analysis of skeletal remains found in a circular ditch (Middle Bronze Age) in Nymburk (Central Bohemia)

Petra Beran-Cimbůrková

The unique quality of the burial area lies in the fact that it is the first registered case in Bohemia in which burials are deposited directly in a round ditch, not in the central burial chamber in the space demarcated by this ditch. Skeletal material was obtained during the rescue archaeological excavation, which took place in 2009 in Nymburk. At the site were found 10 graves: 8 graves were dated to the Middle Bronze Age and 2 to the Hallstatt period (Bylany culture). This analysis focuses only on the funerals in a circular ditch, which was dated to the Middle Bronze Age. In the circular ditch were found 7 graves (one with two individuals in one grave) a total of seven human individuals in six graves (one grave contained only animal bone).

The material was unearthed by author. Preservation of human bones varied, but generally increased with the depth of deposit. During the processing of the material were used standard morphometric and morphoscopic methods. Determination of sex showed 3 females, 2 males and 2 not identified individuals (according to DNA analysis more males). Age at death of 7 individuals covered the range from 12 to 50 years (12-14, 14-16, 16–18, 17–20, 30–40, 35–40, 30–50 years). Stature was estimated in one adult male (a very high stature) and one adolescent female (very high stature). In two adults stature was not determinable and the remaining three individuals were immature. From the anatomical varieties there was an interesting finding of sacralised first coccygeal vertebra of an adult male (feature no. 359). On the left clavicle of the same individual was found the costoclavicular fossa, which is related to excessive load of costoclavicular ligament. No significant pathological changes were recorded. There were just fine and medium dental calculus on the labial surface of upper and lower incisors (in 5 individuals) and Schmorl's nodes on the bottom of the terminal area of Th 4-Th 7 (spondylosis deformans) on the skeleton of the adult male (feature no. 359). There were no human bones in the grave in feature no. 379, only a fragment of os coxae of larger animal.



Burial traditions in late Pleistocene and early Holocene Northeast Africa: a comparative view

Lenka Varadzinová & Ladislav Varadzin

Was there a characteristic burial tradition (or traditions) among late Pleistocene and early Holocene hunter-gatherers along the Nile? And if so, can we trace formal affinities between the burial tradition(s) along the Nile and in East and Central Africa from where expansion of at least one part of postglacial reoccupants of the Nile corridor has been assumed? We examine these questions based on published and unpublished burial grounds in these regions, including large cemeteries uncovered recently in the Sabaloka Mountains at the Sixth Nile Cataract (central Sudan). Our aim is to ascertain whether and to what extent a comparison of the funerary behaviour and the character of burial sites can indicate an expansion of hunter-gatherer populations or cultural traditions just like material culture or biological traits do.

Cultural adaptations in the Sahelian hinterlands during African Humid Period. Insights from Jebel Shaqadud, Sudan

Ladislav Varadzin, Lenka Varadzinová, Stanley H. Ambrose, Hamad Mohamed Hamdeen, Jan Hošek, Jon-Paul McCool, Lucie Juřičková & Adéla Pokorná

Jebel Shaqadud preserves important archaeological relics that in the territory of today's Sahel best illustrate prehistoric cultural adaptations that did not depend on aquatic food resources. The region is famous for what has been known as the Shaqadud site complex investigated for the last time forty years ago by the Sudanese-American expedition (Anthony Marks, Abbas Muhammed-Ali, and their colleagues). This expedition documented prehistoric stratigraphies up to seven metres thick and dated between ca. 6,200 and 2,000 cal BC. In 2021, an international inter-disciplinary team directed by the first author of this paper resumed archaeological investigation of this area. Here we present the first findings of the 2021, 2022 and 2023 field campaigns and pilot AMS radiocarbon dates that shed new and surprising light onto the occupation and environment of both this area and the eastern Sahelian hinterlands.

New insights in to the record of Magdalenian site of Hostim

Katarina Kapustka, Nikola Koštová, Lenka Kovačiková & Eliška Zazvonilová

Within this paper, we would like to present the results of analyses that were conducted on the material obtained from the Magdalenian site of Hostim. The AMS radiocarbon dating, stable isotope analysis, and cementochronology were applied.

Hostim is a key site of the Bohemian Magdalenian record, and it is well known for its artwork, especially animal engravings. The site was excavated from 1963 to 1965 and published by S. Vencl (1995). The site revealed numerous artifacts (lithics, engraved red ochre, engravings on slate tablets, macroliths, bowls, palettes, ornaments) and ecofacts (animal bones, charcoals, malacozoological remains). It is an open air site situated in Bohemian Karst above Berounka river.

Initially, only one Magdalenian radiocarbon date was obtained with really poor precision (Ly1108 12420 ± 470 BP), so this paper's main aim is to present results of actual radiocarbon dating, which helps us not only to precise dating of the site but to tackle the question of its interpretation too. Last year, the AMS dating was conducted on ten more samples in CRL and Zürich. The dated material were animal bones (mostly horse, but also hare and reindeer).

The time span of chronological association of the site, if it was done according to present material, would be similar. New radiocarbon dates did not refine remarkably original conventional radiocarbon dating, but they changed our understanding of the site a little bit. These precise dates, which cover quite a long time span, indicate very probable repetitive use of this site. The layer, which was originally interpreted as a single event situation, seems to be more probably a result of several events.

Except for chronological precision, we tried to determine the season(s) of the use of this site cementochronology. According to the analysis of animal bones, the original season was determined as spring/summer. Horse teeth were not preserved enough to say something about the season from the cementum microstructure. Thanks to the analysis of stable isotopes of N and C, we have some insight into the natural environment around the site. It seems that there was quite a diverse landscape with variable types of ecosystems, but to be more precise about this, it will be necessary to involve more samples.

As happens often, more analyses were done, more questions arose. To reliably answer the genesis and development of the site, it will be essential to reopen the site and try to apply micromorphological observations to find out if this site represents a single event or repetitive occupation. Revision of the materials can also help to answer this question.

References

Vencl, S. 1995: *Madalenian of Bohemia*. Praha: Institute of Archeology, Prague.

SESSION II



Morphological trends in early shouldered points assemblages in Central and Eastern Europe

Robin John & Andreas Maier

Shouldered points are a highly distinctive class of lithic projectiles of the Upper Palaeolithic in Europe with a wide geographic distribution and high regional and chronological variability. The earliest shouldered points appear in Central and Eastern Europe at around 29 ka where they mark the beginning of the Willendorf-Kostenkian. At around 25 ka, they spread towards the west and can be found in both Epigravettian and Solutrean assemblages, with morphologically distinct variants in different parts of Europe. After 22 ka cal BP, shouldered points become a less frequent component of lithic assemblages, but seem to stay a part of the hunting equipment until about 15/14 ka (Maier et al. 2020), when they are particularly numerous in northern Germany, Poland, the Netherlands, and Denmark.

Diachronic trends in the morphology of shouldered points are currently analysed in an ongoing PhD project (RJ) conducted at the Neanderthal Museum and the University of Cologne. In this contribution, we focus on diachronic trends in the shape and dimensions of these points as well as on their degree of standardization and variability within individual assemblages and larger regions that are dated to the time of their first emergence. To this end, we analyse drawings of over a hundred complete specimens from 22 sites using PyREnArA, a semi-automatic code script, specifically designed for the morphological investigation of lithic projectile points (John et al. 2023). We discuss what aspects of the morphology change contingent on the progress of time. In addition, we evaluate the strength of the diachronic change and compare it to the strength of the gradients observable for the Solutrean on the Iberian Peninsula between 25 and 20 ka.

References

Maier, A., Liebermann, C., Pfeifer, S. 2020: Beyond the Alps and Tatra Mountains — the 20– 14 ka Repopulation of the Northern Mid-latitudes as Inferred from Palimpsests Deciphered with Keys from Western and Central Europe. *Journal of Paleolithic Archaeology*. DOI: 10.1007/s41982-019-00045-1.

John, R., Linsel, F., Roth, G., Maier, A. 2023: *PyREnArA* (Python-R-Enviroment-for-Artefact-Analysis) (Version 1.1). Zenodo. DOI: 10.5281/zenodo.7778071.

New finds at a well-known site. Anthropological analysis of skeletons from several overlooked graves from Staré Město – "Na Valách"

Martina Fojtová & Luděk Galuška

The rescue archaeological excavation on the construction of the Cyril and Methodius Centre of the Slovak Museum (carried out in cooperation with the Moravian Museum – Centre for Slavonic archaeology, and archaeological department of the Slovak Museum) in the southern part of the famous Middle Hillfort period burial ground "Na Valách" in Staré Město took place in the winter of 2020 (Galuška, Langr 2021). The site had been excavated in the 1940s and 1950s (Hrubý 1955), thus, no other archaeological findings were expected here. Nevertheless, several graves were still found. Graves 1/2020 to 4/2020 were found relatively close to each other, approximately between the 1949 and 1950 excavation seasons boundaries, three other graves (5-7/2020) were located separately, also in the outskirts of the late 1940s and 1950s research areas when they apparently escaped the attention of archaeologists.

Unfortunately, most of the graves were damaged during the machine excavation, which was subsequently reflected in the degree of preservation of the skeletal material. In total, seven grave pits with nine human skeletons were discovered: six single graves (H 1-5/2020, 7/2020), Grave 6/2020 was almost completely destroyed by the excavator, and subsequently, the remains of two individuals (an adult and a child) had to be collected in a pile of excavated dirt, so it cannot be ruled out that originally it was a double grave; the skeletal remains of a child marked as Grave 8/2020 were discovered similarly, but its grave pit was not found at all.

The anthropological analysis identified three adults (one male and two females) and six non-adults, one of whom is presumed to be of the female sex (H 7/2020). The age-at-death estimation of the adult females was 20-30 and 45-55 years, respectively; the male probably died between 40 and 60 years of age. Three of the immature individuals died between the ages of 15 and 17 years, one child was about 3 years of age and two other children were aged 8-9 years. Despite the young age (and presumably higher social status) of most individuals, many dental pathologies were found in them. There were also signs of inflammatory processes of various origins, or porotic skeletal lesions (probably due to anaemia).

Based on the grave goods, the graves in question can be dated to the younger phase of the burial site "Na Valách", i.e. from the second half of the 9th century to the beginning of the 10th century. Except for Grave 5/2020, all the others yielded rich finds – a total of 21 earrings (in various states of preservation), a ring, a decorative button (gombík), two knives and 5 ceramic fragments. One more decorative button and a round-shaped plate – probably a coin – were traced in the area after the top layer was removed using metal detectors. The nature of the finds indicates that the graves belonged to representatives of the upper social class of early medieval Moravia in the second half of the 9th century. All finds are currently part of the collections of the Moravian Museum.

References

Galuška, L., Langr, J. 2021: Staré Město. *Přehled výzkumů* 62(2), 254. Brno. Hrubý, V. 1955: *Staré Město. Velkomoravské pohřebiště "Na valách".* Praha: ČSAV.

Yes, we can: A Social-Archaeology Approach to prehistoric Hunter-Fisher Gatherer societies through Ethnoarchaeology

Robert Carracedo-Recasens, Albert García-Piquer, Jordi Estévez-Escalera & Assumpció Vila-Mitjà

There continues to be a persistent need for a social approach to the study of prehistoric Hunter Fisher Gatherer (HFG) societies. Prehistoric Archaeology had previously neglected the social aspect until the late 1970s, resulting in a conceptual insufficiency in existing explanations for many years. However, the current landscape has changed. The direction of data publishing has shifted away from the social aspect of archaeology, particularly in relation to HFG societies. Instead, the primary focus is on publishing specific information pertaining to ecology, chronology, and material culture, as there is still a sense of the impossibility of applying a rigorous archaeological approach to understanding social relations in HFG prehistoric societies.

Ethnoarchaeology can be used to contrast ethnographic sources with the archaeology of synchronous sites within the same society. This could assist in developing and refining the necessary methodology to approach the social organization of prehistoric HFG societies. Our approach to Ethnoarchaeology, which we have called Experimental Ethnoarchaeology, is intended as a tool for refining methods and establishing effective archaeological methodologies to develop social approaches to HFG societies. In other words, archaeological work in sites of ethnographically well-documented HFG societies could offer the opportunity for theoretical and methodological experimentation that we need in order to access social relations in Prehistory archaeologically.

Throughout our projects spanning over two decades, mainly in Tierra del Fuego, we have investigated these issues and have produced a substantial body of publications and data. In Tierra del Fuego, after the critical analysis of all ethnographic sources (writings, graphic information and objects deposited in museums), we have excavated settlements from the time of contact with Europeans of three different groups described by Ethnography. We have also excavated and studied ceremonial and funerary sites. New research projects are under way and field works continue on specific task sites, like canoe yards, and congregation and meeting places of people of the different groups. At last, we have been able to compare the sequence of development of littoral HFG societies on both ends of the Pacific coast, that ended in a very opposite social organization.

The presence of spatial patterns and recurring strategies in the general organization of space has been promptly highlighted. The spatial connections found repeat themselves consistently as the occupation units progress, indicating a deliberate, recurring, and comparable arrangement of the social environment. This suggests that the repeated utilization of space by various agents reflect a deliberate strategy, which in turn upholds social norms and ensures social order. Additionally, the analysis of funerary practices and osteological evidence enables us to establish connections between micro and macro space with each of the sexes. Thus, providing a deeper understanding of the development of social norms and inequality.

In our projects, we provide evidence that the functioning of society has historically depended on the establishment of social norms. These norms involve a division of labour based on sex and an imbalanced power dynamic that disadvantages and discriminates against women, ultimately granting control over reproduction. Social norms play a significant role in governing societies, influencing both biological and social reproduction. These norms are essential for the long-term sustainability of societies that lack direct control over resource reproduction.

It is essential to include in the archaeological agenda the study of social norms in general and particularly those associated with the reproductive process. It is crucial for developing a more comprehensive archaeology and provide explanations for social processes and their dynamics.

The early Gravettian of Mezhihirtsy I site (Ukraine). Traces of Pavlovian culture at Dniester Valley

Larissa Kulakovska & Vitaly Usyk

The Upper Paleolithic Mezhihirtsy I site (49°07'36.8" N 24°47'12.3" E) is located 27 km from the city of Ivano-Frankivsk on Mount Vershtova (a cape-shaped remnant of the 6th terrace of the Dniester River) on the territory of a marl quarry. The site was investigated in two stages in 1970-1980 on an area of about 250 square meters. The archaeological layer belongs to the upper part of the Vytachev paleosoil (upper pleniglacial, Denekamp), and has a C14 date: 27020 ± 370 (GrN-25391) (Haesaerts et al. 2007). The collection is homogeneous and includes more than 14,000 artifacts. They are made mainly of local Turonian flint. The primary flaking process took place directly on site. This is evidenced by the presence of the primary flakes/blades, crested flakes/blades, core tablets, etc.

The collection has all the signs of the Gravettian techno-complex: uni- and bi-directional blade/bladelet reduction strategies, the presence of elongated and wide blades, the use of a soft hammer and a characteristic typological set (burins, endscrapers, points on blades, truncated pieces, backed tools, etc.). There are many examples of Corbiac-type fragmentation of blades that we have not included in the burins. A separate group is represented by bifacial points (leaf-shaped, sub-triangle). Backed pieces are represented by Gravette/microgravette points, truncated bladelets/microplates, so-called "Rgani-type knives" (waste of backed preforms with shoulder), microsaws, etc.

The collection also includes five unmodified sandstone tools identified as pestles (4) for grinding of ocher and the lower grinding slabs (supports) (1) (Stepanova, 2015). Artifacts made of bone and tusk are practically absent, with the exception of a fragment of a mammoth tusk point with horizontal cuts.

In general, according to technological and typological features, the industry was assigned to the second group of Dniester Gravettian (Borziiak, Kulakovska, 1998).

The Mezhihirtsi I site collection has analogies in the Pavlovian culture (Nuzhnyi 2015; Polanska, 2020; Usyk, Kulakovska 2022). M. Polanska determines two groups in the Pavlovian culture, one of which contains microsaws (Polanska, 2021). The industry of the Mezhihirtsi I, most likely, can be attributed to this group. The difference lies in the presence of a series of bifacial points. At the same time, bifacial points occur in the early Gravettian sites of the Dniester (Molodovo V, Voronovitsa). It is possible that this is not connected with local cultural traditions but with seasonal hunting practices. Thus, the Mezhyhirtsi I is currently the earliest Gravettian site in the Dniester valley, and in Ukraine in general, which represents prominent features characteristic of the Pavlovian culture.

References

Borziak, I. O., Kulakovska, L. V. 1998: Gravette of the Dniester area. *Arkheolohiia* 4, 55-64. (In Ukrainian)

Haesaerts, P., Borziak, I., Chirica, V., Damblon, F., Koulakovska,L. 2007: Cadre stratigraphique et chronologique du Gravettien en Europe Centrale. *Paleo* 19, 31-51. Nuzhnyi, D. 2015: *Verkhnii paleolit zakhidnoi i pivnichnoi Ukrainy (tekhniko-typolohichna variabelnist ta periodyzatsiia)*. Kyiv: Vydavets Oleh Filiuk. (In Ukrainian) Polanska, M. 2020: *Questionnement sur la du Pavlovien par l'étude technologique des gisements moraves.* Spisy Archeologického ústavu AV ČR Brno 66. Brno: Czech Academy of Sciences, Institute of Archaeology Brno. **Polanská, M. 2021:** Est-il possible d'identifier des groupes pavloviens sur le territoire d'actuelle Slovaquie? *Študijné zvesti*. Suppl. 2, 111-128.

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Stepanova, K. N. 2015: Klassifikatsiya udarno-abrazivnykh orudiy verkhnego paleolita (po materialam stoyanok Russkoy ravniny). *Zapiski Instituta istorii materialnoy kultury RAN*, 11, 7-23. (In Russian)

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SESSION III



Reconstructing Upper Palaeolithic mobility through provenancing radiolarite artefacts

Martin Moník, Zdeňka Nerudová, Tomáš Pluháček & Jitka Součková

Distinguishing between sources of lithic raw materials used by Palaeolithic huntergatherers and reconstructing procurement patterns has quite a tradition in Moravian archaeology (e.g., Valoch 1975; Oliva 2002; Přichystal 2013), but few studies have so far applied chemical fingerprinting in the area. Our study focuses on provenancing radiolarite artefacts from Moravian Aurignacian and Gravettian sites, and the first results are presented here. Radiolarites were commonly used in Moravia since at least the Middle Palaeolithic, and their principal source was always presumed to lie in the White Carpathians of Western Slovakia. Other sources, however, are theoretically possible, so we collected material from six different Central European regions, namely Northern Calcareous Alps, Vienna region, Pálava hills, Gerecse Mts., W Slovakia and Pieniny Mts. The collected samples have been subjected to elemental analysis using laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) to fingerprint concrete outcrops. LA-ICP-MS method cover more than 47 elements and expanding on Brandl et al. 2014. As the chemical signal of different sources was sometimes similar in the study by Brandl et al. (2014) we have also observed colour variability with Munsell scale and instrumental spectrophotometry to make the distinction more reliable. A total of 244 samples were collected on outcrops out of which 156 were prepared by May 2023 for LA-ICP-MS analysis. In the first stage of our study, radiolarite artefacts from Aurignacian sites at Nová Dědina I, Tvarožná I and Milovice (10 pcs. from each) were submitted for elemental screening. It is by now evident that different sources can be distinguished just by combining Ba, Li, B and Sr elements in PCA analysis (Fig. 1); further traces and elemental ratios will be tested to completely separate the regions with radiolarite outcrops. The overlapping regions in Fig. 1 are possibly due to the nature of Pieniny Klippen Belt (PKB) of Western Carpathians where both Slovakian and Polish radiolarites are encountered - PKB forms a continuous structure stretching from W Slovakia to N Romania. Final results, though, including Palaeolithic artefacts, will only be presented in Mikulov 2023 Meeting. It also transpires that colour is not a reliable criterion for distinguishing between radiolarite outcrops or areas as most colour varieties are present on different outcrops even within single regions. Meanwhile, the re-examination of lithic material from the three Aurignacian sites has shown that the radiolarites from White Carpathians might have been collected as "relay material" (Féblot Augustins 2008) during transfers to or from more easterly territories (with limnic cherts, lumachelles, metarhyolite or obsidian) whereas several other materials (claystones, quartz arenites) were collected close to radiolarite outcrops.

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Figure 1: Preliminary fingerprinting of radiolarite outcrops in Central Europe from six principal regions (Slovakian sources are divided in two here) using four trace elements (Ba, Li, B and Sr). Different regions can be fairly well distinguished. NCA = Northern Calcareous Alps.

Loose human bones as evidence of the multi-step burial rite. Case study of the Stone Age hunter-gatherer sites at Dudka and Szczepanki, Masuria (NE-Poland)

Karolina Bugajska

Dudka and Szczepanki sites are located on two islands on former lake Staświn in Masuria, NE-Poland. Both sites were settled from the Late Palaeolithic till the end of Late Neolithic. In the Mesolithic both islands were used as seasonal camps, whereas in the Para-Neolithic period the stay at the sites was prolonged and they were used probably year-round. The Para-Neolithic period begins with the first appearance of the cemetery at the sites, but the economy is still based on hunting and gathering till the end of the Late Neolithic.

At Dudka site, a cemetery was uncovered with 25 graves and at least 116 individuals. Secondary inhumation burials (34%) and cremations (45%) predominates there over primary burials (11%). There are also disturbed primary burials from which some selected bones of the deceased were taken out.

Both sites yielded large assemblages of loose human bones which were found in different contexts on the settlements. There were in total 1310 bone fragments, 746 from the cemetery (trench VI) at Dudka and 564 from settlement zones at both sites. Loose human bones could be affiliated with diverse ritual behaviours and different stages of multi-step burial rites practiced by local hunter-gatherers. The interpretation of loose human bones is based on the osteological and taphonomical analyses and on the context in which bones appeared. Bones which were found beyond formal grave context at the cemetery at Dudka could be interpreted as separate deposits put directly on the cemetery ground (mainly skulls) or they are remnants of purposely disturbed and emptied graves from which whole skeletons were taken out and only small elements were overlooked and lost. In turn, human remains which were found in the settlement areas of both sites are mostly the remnants of the temporary burials. The main place for deposition of temporary burials was a sloping lake shore in trench III at Dudka site (eastern bay). Loose human bones appeared there mostly in the Para-Neolithic layers, affiliated to Zedmar culture. However, the oldest evidence of temporary burials come from the Early Mesolithic (Boreal period). Besides, some bones, mostly skulls, could be distinguished as possible memorabilia of dead ancestors which were kept directly at the encampment.

The early medieval burial site of Pucking: New insights into cultural connections between Bavaria and Avaria

Lorenz Gomahr & Jennifer Portschy

The newly discovered early medieval burial site of Pucking is located in Upper Austria near the river Traun, about half-way between the cities Wels and Linz. In today's known extend the burial site consists of 32 individuals buried in 30 graves. The most striking features of the site are traces of three circular ditches surrounding individual graves. Although this type of grave construction is known from other regions, it is unique to the area under investigation so far. The majority of the burials are equipped with lavish grave vessels goods. mostlv being jewellery, and dress components. Through typochronological classifications of these finds the site was dated to the early medieval period, specifically the early Carolingian time. During this time the region served as a frontier area between the Bavarians, as part of the Frankish empire, in the west and the Avars in the east. Cross-border exchange and transmission resulted in a specific material culture of that region.

The burial site is currently under investigation in the course of an upcoming master's thesis at the University of Innsbruck, Austria, and additional bioarchaeological examination is funded by the Federal Museum of Upper Austria (OÖ Landeskultur GmbH). Besides in-depths study of findings and the structure of the site, macroscopic anthropological analysis of the buried individuals provided further insights into living conditions and health status of the early medieval population of Pucking, with a specific focus on infant and maternal health.

Together with new excavations and re-evaluations of other early medieval sites around the Traun, the investigation of Pucking may help gaining further understanding on the population dynamics of this area of constant cultural exchange.

The Late Gravettian hunter-gatherer camp at Doroshivtsi III and the significance of the Middle Dniester Valley (Western Ukraine) for settlement during the LGM period.

Laëtitia Demay, Larissa Kulakovska, Dariusz Bobak[,], Vitaly Usyk, Olesia Kononenko, Marta Połtowicz-Bobak, Maria Łanczont, Przemysław Mroczek, Karol Standzikowski, Adam Nadachowski & Anna Lemanik

The Doroshivtsi III site is one of the most important Late Gravettian sites in the Middle Dniester valley. It was discovered in 1968 by Chernysh. In 2006-2010 a systematic research was undertaken by an international team led by Kulakovska (Koulakovska et al. 2021). The 2019 and 2021 surveys (Poltowicz-Bobak et al. 2022) are a continuation of the earlier work. The excavation included a part that located eastward of the previously studied area.

The site is located inside the Dniester canyon overlain by loess sediments. The geological research covered a 18 m profile. The upper part of the sequence, to a depth of about 5 m, comprises stratified, carbonate eolian-colluvial sediments, 20-22 ka in age. Lower down to a depth of ca. 12 m there are two sets of poorly formed soils separated by a package of periglacial stratified silty-sandy sediments, dated to 24-41 ka. Artefacts and bones are present between 6.2 and 8.2 m. The lower pedocomplex is formed by two interstadial soils. Below this is a series of stratified slope deposits resting on gravels of the trough series.

The archaeological artefacts discovered in 2019 and 2021 were few in number (less than 100 specimen) but their characteristics are analogous to the Gravettian artefacts previously discovered. The number of artefacts in each layer ranged from a few to a few dozen pieces. The very small number of cores and tools is noteworthy. They occur only in some layers.

Most of the radiocarbon dates obtained from the cultural layers are between approximately 25,000 and 29,000 years cal BP.

In contrast to the flint artefacts, faunal remains are abundant. Bones of mainly mammoth, reindeer and horse were identified, as well as wolf, fox and raven. Mammoth and reindeer are found in all layers (except layer 0), horse - in layers 1, 3, 4, wolf and fox - in layer 2, raven - in layer 4. In layers 1, 2 and 4 mammoth remains outnumber reindeer remains, which also distinguishes this region from the one studied earlier. Bones from all parts of the skeleton are represented in all three layers. There are few horse remains. Mammoth is represented by in situ deceased specimens. There are no bone tools.

The bone composition in layers 1, 2 and 4, with a predominance of mammoth remains, distinguishes the part of the site excavated in 2019 from the area further west. This is probably not a coincidence, as this proportion is different not only to the site but also to most sites in the region. It may be due to functional (mammoth kill/butchering site) or chronological differences. Animal remains, do not bear, apart from one rib, traces of human activity.

Doroshivtsi is an example of a repeatedly inhabited seasonal camp. Analysis of the reindeer remains of layers 4 and 5 indicates its use in summer, which corresponds to data from earlier studies, although the latter also indicate use of the site at the end of the winter seasons (layers 3 and 5) (Kulakovska et al. 2015). Thus, it is most likely a case of settlement of the encampment during periods associated with reindeer migrations,

located on the route of their transits. The availability of stone raw materials of good quality is an additional advantage.

The Doroshivtsi site fits perfectly into the settlement pattern of the Gravettian of the middle Dniester and the neighbouring middle Prut valleys. Gravettian settlement, the most complete sequence of which is evident at the Molodova V, is attested here from the Early Gravettian to the Late Pleniglacial phase, and the Late Gravettian or Epigravettian settlement. The Doroshivtsi corresponds mainly to the younger phase (middle phase according to Nuzhnyj (2015).

Hunter-gatherer groups that settled the middle Dniester valley took advantage of very favourable natural conditions. The valley in this section of its course is a kind of local refugium, providing more favourable conditions for both animals and people.

Acknowledgements

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SESSION IV



Paleolithic survival strategies of Epigravettian hunter-gatherers at Kammern-Grubgraben: increased use of fur as sign of adaptation to a cold environment

Kerstin Pasda, Sebastian Pfeifer, Lilian Reiss, Norbert Buchinger, Thomas Einwögerer, Marc Händel, Andreas Lücke, Andreas Maier, Holger Wissel & Christoph Mayr

In addition to an energy-rich diet, protection against low temperatures and moisture is essential for human survival in a cold environment. The first wide-spread dissemination of eyed needles throughout Europe occurred during the Last Glacial Maximum (LGM) along with ubiquitous pointed bone tools, suggesting sewing technology had reached a high level of sophistication.

Archaeological and archaeozoological investigations together with isotope analyses of animal bones from Paleolithic sites in Lower Austria provide indications for an adaptation of Paleolithic people to changing climate. Our studies show significant environmental differences between the Early Gravettian and the Early Epigravettian. Bone collagen δ^{13} C values from the sites Krems-Hundssteig, Krems-Wachtberg and Langenlois A (Early Gravettian, ca. 33 - 29 ka cal BP) and from Kammern-Grubgraben (Early Epigravettian/LGM, ca. 24 - 22 ka cal BP) show niche separation between herbivores related to differing habitats. In the LGM, mammoths appear in the horse habitat presumably because their previous ecological niche is disappearing. It seems that the isotopic niches of all herbivores are narrowing in the LGM. Indirectly, this could be interpreted as greater monotony of the landscape, which would have had considerable effect on human subsistence strategies. Regarding the $\delta^{15}N$ values of bone collagen we observe a general decrease from the Early Gravettian sites towards Kammern-Grubgraben. This shift is best explained by increased permafrost conditions caused by a general cooling during the LGM. The increasingly cold and dry climate may have led to a growing demand for complex warm clothing and other goods made of furs and skins. The faunal composition of the analyzed sites changes significantly through time, from mammoth-dominated assemblages in the Early Gravettian to a dominance of ungulates, such as horse and especially reindeer in the Early Epigravettian. The dominance of reindeer of all ages and sexes, but especially the high proportion of young animals in Kammern-Grubgraben is also striking. In addition, our data show that reindeer was hunted exclusively in winter suggesting that one main purpose of the repeated visits to this site was to obtain fur and hides. The presence of all skeletal parts of reindeer can be considered as further indications of specific use of the fur. The numerous eyed needles recovered at Kammern-Grubgraben reflect the necessity for producing tight and regular seams in the final stage of processing these hides and furs.

Human impact on Czech sandstone areas as seen through pollen diagrams

Petr Pokorný, Petr Šída & Vojtěch Abraham

Archaeological situations are mostly synchronous in nature and do not allow simple observation of diachronic changes at the landscape level. For understanding the dynamics of human influence on the environment at the level of the immediate vicinity of human settlements, there is still a not fully appreciated source, which is pollen records. We normally use them as point data for a given location and time, but they have not yet been analysed in a dense network spanning thousands of years. The Bohemian Paradise is exceptional in the density of archaeological sites and pollen profiles, where we can observe the relationships between the network of settlements and the dynamics of changes in the landscape level. On the pollen profiles, we see the intense influence of hunters and gatherers on the environment, including forest management (for example, the support of hazel stands). The transition to forest grazing at the beginning of the Late Neolithic (Eneolithic) and the intensive restructuring of the landscape at the beginning of the Younger Bronze Age, when unprecedented deforestation and changes in the ecosystem occur. At this time, the use of the landscape reached its maximum, and subsequently we can observe several phases of decline and return to a more forested state. Continuous data make it possible to monitor not only the extent of changes, but also their dynamics and, indirectly, the dynamics of changes in human societies.

Multidisciplinary analysis of Bell Beaker cemetery in Popůvky

Zdeněk Tvrdý, Alžběta Bedáňová, Sylva Drtikolová Kaupová, Ivana Jarošová & Kristýna Brzobohatá

Bell Beaker period (2500-2200 BC) cemetery was recently excavated in Popůvky (Czechia), containing numerous archaeological finds and human skeletal remains of 75 individuals. One of the largest Bell Beaker collections in our region provided valuable bioarchaeological data, despite the not very good preservation of the skeletons. Demographic evaluation, along with basic metric and paleopathological analysis, form a framework into which the results of further analyses could be embedded.

Of 67 inhumated and 8 cremated individuals, there were 14 males, 16 females, 34 subadult individuals and 11 individuals of unknown sex. The stature of 10 males and 4 females was tall in average. High frequency of dental caries and indicators of nonspecific stress indicate bad health condition of the population. Two cases of possible craniosynostosis along with other congenital anomalies, such as luxation of a hip, were found in Popůvky.

The study of a diet based on the analyses of carbon and nitrogen isotopes and the analysis of buccal dental microwear were compared to grave goods at the individual level which gives us insight into social differentiation in the Late Eneolithic. The pilot study of aDNA of selected individuals provided information on their genetic sex and determination of mtDNA haplogroups.
Man and woolly mammoth at the Kraków Spadzista – taphonomy of the site

Piotr Wojtal & Jarosław Wilczyński

The Kraków Spadzista site, one of the most famous archaeological sites in Eurasia. It was accidentally discovered more than half century ago, in 1967. The excavations at the site were carried out in 21 trenches and test pits from 1968 to the present, with several interruptions. During this period approximately 385 square metres of the site have been explored. The series of radiocarbon dates cluster from 25.0 to 20.0 ky uncal BP, placing the site within the Gravettian cultural complex. The site is best known for the discovery of the large mammoth bone accumulation in trench B+B1. A large number of Late Gravettian artefacts were found among the mammoth remains. Numerous stone artefacts and faunal remains have been also found in trenches close to this assemblage. By 2017, more than 118,000 bone remains of various Pleistocene steppe-tundra mammals had been discovered at the site. The majority of the faunal remains, nearly 30,000, belong to the woolly mammoth (Mammuthus primigenius), of which at least 113 individuals have been estimated. The second taxon well represented in the osteological material of the Kraków Spadzista is the Arctic fox (Vulpes lagopus). The remains of at least 35 individuals of this species have been found. Other mammals discovered at the Kraków Spadzista site are represented by a much smaller number of bones and teeth from single individuals. It should be noted that 700 rodent remains were collected during excavations at the site. They were collected by wet sieving the sediments of the Gravettian cultural layers from the 2011-2017 excavations.

Three possible zones of Late Gravettian hunter-gatherer activity have been identified at the Kraków Spadzista site: a camp area, a lithic workshop and an animal (Arctic foxes) processing area, besides the well-known accumulation of mammoth bones. On the basis of the analyses of lithic materials, faunal remains, isotopic and radiometric data, it can be assumed that the site was frequently reoccupied area by groups of Late Gravettian hunters for periods of a few weeks or months in autumn-winter period. This short-term camp site was related to mammoth hunting and processing. Most of the animals were probably killed and dismembered by the hunters on or near the site. Direct (fragments of flint points embedded in bones) and indirect (artefacts with characteristic impact marks) evidences of mammoth hunting were collected. Cut marks were found on mammoth bones, confirming the dismemberment of killed animals. After the Late Gravettian hunters left, the Kraków Spadzista were visited by wolves. These large carnivores used the remains of mammoths as a food source and gnawed the bones, sometimes very intensely.

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THURSDAY 14. 9. 2023

SESSION V



Lithic assemblages of Duqm, Central Oman

Dominik Chlachula, Maria Pia Maiorano, Amir Beshkani, Jeffrey Rose, Vitaly Usyk, Denis Štefanisko & Roman Garba

Once a small coastal settlement in the al-Wustā Governorate of the Sultanate of Oman, ad-Duqm is currently undergoing rapid economic and industrial development. While its archaeological importance remained largely unknown until recently, the region's rich archaeological and natural heritage is now at risk of gradual disappearance due to ongoing changes.

During the last two decades, archaeological expeditions documented hundreds of sites that span various prehistoric periods. These encompass Pleistocene and/or Holocene lithic scatters, coastal encampments, as well as Bronze Age and Iron Age tombs and triliths. Notably, lithic scatters emerge as a predominant feature within this diverse cultural landscape.

Here we present some of the first results on local lithic industries studied by the TSMO and ARDUQ expeditions. Most of the local industries might be tentatively attributed to Late Pleistocene and Early/Middle Holocene. However, the use of chipped stone tools continued also during the later periods, at least until the Iron Age. Older industries belonging to Lower and Middle Paleolithic are generally missing which is in contrast with Dhofar in southwestern Oman. These regional differences are rising several questions on the demographic and cultural development of South-Eastern Arabia at the end of the Pleistocene and through the Holocene. The relatively young occupation of ad-Duqm might be caused by several factors encompassing environmental changes, geological development, or the wider ecological niche of Holocene populations. Our research in Duqm is at its beginning and most of these topics still remain to be investigated.

Palaeolithic bifacial artefacts from Eastern Bohemia

Petr Čechák, Petr Šída & Marek Pacák

Palaeolithic bifacial artefacts are quite rare in the east Bohemian region. At this moment, only four of such artefacts are known, and they could be classified as Middle to Upper Palaeolithic. Typologically, there is the handaxe discovered in Jilemnice, part of the knife from Bolehošt' and two leaf points from sites of Jaroslav and Černčice. The finds come from different parts of Eastern Bohemia and different Palaeolithic cultural habitats. Also, they were made from different lithic raw materials and has its own, unique circumstances of discovery. On the other hand, they are connected by the technique of making.

The contribution describes all these finds as well as recent surveys on them. Three of the artefacts (knife from Bolehošť and both leaf points) were investigated traceologically and detailed 3D models of them have been created. Also, Černčice is the only site among those four, that still can be archaeologically investigated, currently by field walkings. Thanks to these prospections, the leaf point from Černčice can be set into more specific archaeological context, which is very hard or even impossible for the rest of artefacts.

Stone Age occupation of Jebel Shaqadud, Central Sudan: preliminary results from the 2023 field season of the Shaqadud Archaeological Project

Alice Leplongeon, Jiří Unger, Lenka Varadzinová & Ladislav Varadzin

North-Eastern Africa is often considered a key area in questions related to hominin dispersals out of Africa, the 'northern' route via the Nile Basin and adjacent deserts leading to the only land bridge between Africa and Eurasia. The 'northern' route groups together different paths within North-Eastern Africa, via the Nile Valley and its main tributaries, via the Eastern Desert, or along the Red Sea. In particular, favourable environmental conditions during more humid periods (e.g. during MIS 5), may have facilitated human movements through the arid deserts adjacent to the Nile Valley. However, a gap remains in our understanding of Palaeolithic occupation of these regions, and in particular human adaptation to the (semi)-arid environments during this period. Here, we present preliminary results of the Palaeolithic investigations undertaken during the 2023 field season of the Shaqadud Archaeological Project directed by L. Varadzin. Jebel Shaqadud, located 115 km north-east of Khartoum, central Sudan, and 45 km from the Nile Valley is located in an arid savanna environment, dependant on local precipitations. Since 2018, the project investigates human adaptation to environment fluctuations during the Holocene at Shaqadud. The area preserves the longest continuous Holocene archaeological sequence in the eastern Sahel (Marks & Mohammed-Ali 1991; Varadzin et al. 2022), with new dates pushing back the postglacial occupation of the region to the 12th millennium BP. Until recently, no earlier phases of occupation were documented at Shaqadud. However, the reconnaissance of the area in 2021 and 2022 brought to light the first Stone Age/Palaeolithic finds. As a result, a survey specifically targeting Stone Age finds took place during the 2023 field season, and led to the identification of several Stone Age find spots.

In particular, Stone Age artefacts were found on the surface in two main areas around Kafut Canyon. Most of them present a heavy patina and an abraded aspect, suggesting they are lying in secondary position. From a typotechnological point of view, they are characterised by a dominance of Levallois centripetal preferential and recurrent production, from large cores (>10-15cms). Few retouched tools are present, and they mainly consist of scrapers and denticulates. These characteristics suggest a Late Acheulean or Early Middle Stone Age attribution. This is the first time that Pleistocene Stone Age evidence is documented in this area. These finds add to the evidence for Palaeolithic occupation of eastern Sudan such as in the Eastern Desert Atbara River area (Masojć et al. 2019), in the Khashm el-Girba (Abbate et al. 2010) or along the Red Sea (Beyin 2021) and have the potential to significantly contribute to a better understanding of the complex links between the Nile Valley and adjacent deserts during the Stone Age.

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A new animal engraving from Hošťálkovice II – Hladový vrch (Ostrava, Czech Republic) – the Magdalenian Horizon AH3

Petr Neruda, Zdeňka Nerudová, Matěj Kmošek, Lenka Lisá, Zdeněk Vaněček, Nela Doláková, Antonín Přichystal, Katarzyna Pyżewicz, Piotr Moska, Tomasz Goszłar & Ivo Světlík

The site of Hošťálkovice II – Hladový vrch is systematically excavated since 2019. Previous archaeological seasons confirmed the stratigraphical position of the Gravettian artefacts that were collected in the 80s and 90s of the 20th century (Neruda 1995; Neruda & Nerudová 2000) at the base of the Pleistocene loess (sediment C, AH 2). Moreover, we recognised another archaeological horizon that is preliminarily classified as a Late Palaeolithic/Mesolithic occupation (AH 4) in Sediment B (Nerudová & Neruda 2020). During the 2021 season, we focused on this archaeological horizon in Sediment B to distinguish possible individual stages of the post-Palaeolithic occupation of the site. Nevertheless, sub-recent artefacts in sediment B and the sharp boundary between Sediment B and C indicate intentional damage of the original sedimentation and it excludes the determination of any sublayers in Sediment B.

On the other hand, we detected a new archaeological horizon (AH3) that is situated in the upper part of the loess Sediment C (Nerudová et al. 2022). This horizon (AH 3) was the topic for the research in 2022. We uncovered a longitudinal, sharp demarcated structure, that contains large stone blocks, charcoals, ash, numerous chipped stone artefacts, choppers, hammerstones and one engraved greywacke pebble.

The position of artefacts indicates an intact layer was partly affected by bioturbation and frost fractions of the sediment that moved artefacts vertically. The composition of artefacts and refittings show that the place was used for the in situ production of blades from local erratic flint. Cores and final blades are sparse, and the waste prevails. Therefore, the reconstruction of entire technological processes is complicated. The most significant artefact within the technological classification is a narrow blade with "en éperon" type of the rest of the striking platform. The retouched tools are represented by backed bladelets, end-scrapers borers and burins. Concerning the raw materials used in the archaeological horizon (AH 3) the local erratic flint is the most abundant but we also noted one small fragment of radiolarite, one piece of radiolarite from Hungary (Szentgál type), a jasper that originated from the region of Sowin (Poland) and several blades made from Volhynian flint.

The most spectacular piece found in the stone structure is the pebble of greywacke that has an animal, probably a mammoth, engraved on one side. Several grooves were made repeatedly in the same direction (the back of the animal), and others are represented by single lines. From the stylistic point of view, the animal is analogical to other expressions of animals in the Central European Magdalenian.

The classification of AH3 to the Magdalenian is also confirmed by the presence of "*en éperon*" method and several upper Palaeolithic tools. Moreover, finds are situated in the upper part of the Late Pleistocene sediment without visible penetration of a Holocene sediment into this layer. Therefore, the results of both OSL and 14C dating, which yielded data around 7 ka BP, are unexpected and difficult to explain.

Comparing available data, we have preliminary divided at the site four archaeological horizons — AH 1 (Middle Palaeolithic/EUP), AH 2 (Gravettian), AH3 (Magdalenian), and

AH4 (Late Palaeolithic/Mesolithic), however, Neolithic occupation is not completely out of the question.

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SESSION VI



The late Pleistocene and early Holocene history of Lake Staświn, Masuria, NE Poland, and the hunter-gatherer settlement in the light of stratigraphy and chronology

Witold Gumiński

The former Lake Staświn was one of the largest within Masurian Lakeland. Excavations at Dudka and Szczepanki – two islands of the lake – uncovered a very detailed succession of sediments from the late Pleistocene (Allerød) until the middle Holocene (Subboreal). The chronology and characteristics of following layers from the littoral zone allow to reconstruct the state of the lake, environmental conditions and intensity of settlement in succeeding periods of the post-glacial Stone Age.

4D visualization of an archaeological site. Preliminary results from the Upper Paleolithic site of Milovice IV, Czech Republic

Filip Hájek

3D techniques enable the record and the visualization of any archaeological entity, either a single artifact, or an entire landscape, which enable researchers to retrospectively visit documented features after they were irreversibly destroyed during the excavation process, further analyses when combined with 3D GIS or even to reconstruct the whole site after incorporation of Virtual Reality. The digital environment provides analytical capabilities of high accuracy representation of archaeological data. With time as an additional dimension, 4D may provide archaeologists with a picture of archaeological record on the spatial relations between contexts as well as on the diachronicity of the actions conducted in the site.

The Upper Palaeolithic strata at the site of Milovice IV, located in Southern Moravia, Czech Republic, were discovered in 2009, after the collapse of wine cellars beneath the municipal road. Initiated rescue excavation was carried out in spring/summer of 2021, aiming to document and recover as much archaeological data as possible before the site is irretrievably destroyed.

3D models were integrated into intra-site documentation and excavated squares were georeferenced and photo-documented for photogrammetric processing. 3D models generated in Agisoft Metashape enable not only retrospective visits of the already destroyed site, but also visualization and studying of the whole stratigraphic layers, which is usually not possible during the excavation. Moreover, 3D modelling of different stratigraphic layers provides the visualization of diachronic evolution of the site. This case study further demonstrates that high accuracy 3D representations may provide better understanding of space and time at the site, which can be employed in further analyses and/or in cultural heritage management.

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The dawn of the long-term research on the dynamics of Anabaptist communities in Moravia in the 16th and 17th centuries

Mikoláš Jurda

The Anabaptists coming from German-speaking regions formed a culturally and ethnically distinct minority that made significant contributions to the history of Moravia. Although the community is no longer present in our territory, the influence of the Anabaptist activity in Moravia is re-emerging. Since the spring of this year, the Department of anthropology has been leading an interdisciplinary project aimed at mapping the Anabaptist settlement in Moravia in the 16th and 17th centuries and disseminating knowledge about the Anabaptists to the general public.

The project is the culmination of a research of the burial site near Přibice in southern Moravia, conducted by the Department of Anthropology since 2018. In addition to being studied using traditional osteological methods, Přibice has also become a site where the state-of-the-art methods as a photorealistic 3D documentation or parasitological analyses are applied. Within the project this trend will be followed by extensive genetic and isotopic analyses, as well as stress marker analyses in line with historical, religious and geographic research within the scope of the Moravian region. By comparing data from written sources with those obtained through natural science methods, the project aims to provide a comprehensive reconstruction of the dynamics of Anabaptist settlement in Moravia.

Why there? An overview of the Upper Paleolithic in the Eastern Romanian Carpathians

Mircea Anghelinu, Marc Händel, Daniel Vereş, Ulrich Hambach, Frank Lehmkuhl,

Alexandru Ciornei, Laëttia Demay & George Murătoreanu

The middle sector of the River Bistrița (Eastern Carpathians) hosts the largest concentration of Upper Paleolithic (UP) sites in Romania known to date, covering virtually the entire timespan (41-10.5 ka cal BP) of the period. All UP technocomplexes are represented and show a particularly high density of Gravettian, Epigravettian and Late Paleolithic (Swiderian) occupations. Despite a rather low-resolution of encompassing paleoclimatic archives (loess and loess-derivates), and occasionally coarse archaeological data, the remarkable density of multi-layered sites recommends the area as an ideal ground for tracking diachronic changes in the relationship between UP hunter-gatherers and the peculiar mountain settings they occupied.

Most known findspots (22 out of 28) are located at the foothills of the Ceahlău Mountain (reaching 1907 m asl), in the Răpciuni Basin, in sub-mountainous settings (narrow basins surrounded by extensive river terraces). With the exception of the Swiderian, recorded also at >1000 m asl, UP hunter-gatherer sites display a marked preference for river terraces at middle altitudes (between 300 and 500 masl). GIS predictive modelling corroborated by surface finds suggests that the actual number of sites was much higher. Aside from the strongly patterned habitat preference, perceptible shifts in the intensity of human presence are noticed across the UP. The strong increase in the number of sites dated to the Last Glacial Maximum (LGM) *sensu lato* (ca. 29-19 ka calBP) seems connected to the increased cold and aridity expressed by the local archives through an increase of the fine aeolian sedimentary fraction. LGM environmental changes apparently put a premium on the exploitation of the specific mountain niche, vital in terms of shelter, fuel, animal and siliceous rock resources. The regional presence of the Epigravettian continued up to at least 16 ka calBP.

Lack and/or scarcity of finds suggest a low occupation intensity prior to and maybe also during the formation of a pronounced Tardiglacial cambisoil described in all regional sequences. Afterwards and likely connected to the Younger Dryas return of glacial conditions, consistent human presence is again recorded in virtually all Eastern Carpathian sites. The Late Paleolithic occupation continues into the Swiderian for which we evidence high-altitude occupations at the Pleistocene/Holocene interface.

SESSION VII



History of research of the Švédův stůl cave in the Moravian Karst

Ondřej Mlejnek, Martin Oliva, Miriam Nývltová Fišáková, Lenka Lisá & Aleš Bajer

The conference paper presents a comprehensive overview of the history of archaeological, geological, anthropological and paleontological research in the Švédův stůl cave (cadastral territory Ochoz u Brna) in the southern part of the Moravian Karst. Most of these excavations, which took place here from the end of the 19th century to the present, have been described in the literature already in the past, but never in a comprehensive way for an English-speaking audience. In this paper, the authors focus in particular on the excavation of Bohuslav Klíma, which took place here from 1953 to 1955, and the discovery of the lower jaw of a Neanderthal by the student Karl Kubasek in 1905 and the circumstances under which this find came into the collections of the Moravian Museum in Brno. For the first time ever, some photographs from the archive of Bohuslav Klíma will be presented, which document his excavation of this cave in the 1950s. Documentation from the archive of B. Klíma was also used to place new trenches excavated in front of the cave in 2019 by an international research team into the spatial framework of Klíma's excavation. The authors of the paper also anticipate publishing a research paper on this topic in an upcoming special issue of the Přehled výzkumů journal.

LGM and LG site Mohelno - Plevovce: Current state of the art

Petr Škrdla, Jaroslav Bartík, Klára Augustinová, Tereza Rychtaříková, Yuri E. Demidenko, Ivo Světlík & Ladislav Nejman

A salvage archaeological excavation of the Mohelno-Plevovce site continued during the maintenance break at the Dalešice Hydro Power Plant in the summer of 2022 and 2023. Two main aims of those field seasons were excavation of Last Glacial Maximum (LGM) stone structure F (KSF) and completing excavation of Late Glacial (LG) artefact concentration AC2.

The southernmost and the lowest stone structure KSF was completely excavated. At the southeastern part of the trench, the artefact-bearing horizon was damaged by later occupation. Stone Structure F was not as continuous, and the Paleolithic layer did not show as high density of artefacts as was the case with the stone structures excavated in previous years (KSA, KSB, KSD, and KSE). The LGM occupation consists of 5 paved stone structure that are almost equally spaced. An attempt was also made to test artefact density in the so far unexcavated area between KSD and KSE.

The previously excavated AC2 lithic cluster was significantly expanded and a different type of a possible dwelling structure (compared to stone structures) was documented – a dense concentration of artefacts, burnt bones, and small gravels partially delimited with large stones along its perimeter. Prevailing tool type is burins and burin spalls. None of the other chronologically or culturally distinctive tools were recovered. The preliminary dates of burnt bones indicate a minimum age around 14-15 ky cal BP. Another important discovery are refittings connecting lithic clusters AC1 and AC2.

The salvage excavation, analyses and publishing will continue in the following years.

The Gravettian in Transcarpathian Ukraine: new evidence from the multi-layered open-air site Korolevo II

Vitaly Usyk, Roman Garba, Natalia Gerasimenko & Philip Nigst

During the period of Paleolithic research in Transcarpathia from the 1930s to the end of the 20th century, there were no reports of the presence of the Gravettian technocomplex in this region. Until the mid-1970s, only one site was known among the stratified sites -Beregovo I (Mala Hora), investigated by the Czech archaeologist J. Skutil, the industry of which was defined as Aurignacian. In 1979-80, industries of the transition period from the Middle to the Upper Palaeolithic (Korolevo II, Layer II), or (IUP), and Early Upper Paleolithic (EUP), Korolevo I, Layer Ia, were discovered and investigated at the Korolevo site complex. At the beginning of the 21st century, the open-air site Sokyrnitsa I-A was discovered with an early Upper Paleolithic industry similar to Korolevo I, Laver Ia. Excavations at Beregovo I made it possible to attribute the industry to the Proto-Aurignacian. A cultural layer assigned to the Epigravettian was exposed at the site Shayan I. The general picture of the cultural sequence of the Upper Paleolithic of Transcarpathia was as follows. The industry of Korolevo II, Layer II, marks the transition to the technology and typology of the Upper Paleolithic (38,500 \pm 1000 BP). Collections of Korolevo I, Layer Ia, and Sokyrnytsia I-A, Layer III, belong to the early stage of the Upper Paleolithic (MIS 3). Proto-Aurignacian is represented by Layer I of Beregovo I (MIS 3). There was a significant cultural and chronological hiatus between the time of the mentioned industries and the Epigravettian of Shayan I (21,000-19,000 BP). There was a single. non-in situ assemblage of Epigravetian (Layer 0) noted at Korolevo II. Our research at Korolevo II between 2014 and 2017 revealed a stratigraphic sequence with five cultural layers (CL E, D, C, B, and A, from bottom to top). The lower Layer E is correlated with Layer III (Levallois) of Korolevo I and Layer D is correlated with Layer II (initial Upper Paleolithic) of Korolevo II. According to technical and typological features, Layer C is Early Upper Paleolithic and may correspond culturally to the Early Upper Paleolithic assemblages of Korolevo I, Layer Ia, and Sokyrnytsia I-A, Layer III. Cultural layer B (former Layer 0) has apparent features of early Gravettian. The obtained radiocarbon samples collected from Layer C suggest an age of $34,987 \pm 91$ BP (40,501– 39,794 cal BP), and 27,790 ± 53 BP (31,889–31,510 cal BP) for Layer B. Taking these data into account, it is possible to draw conclusions about the first evidence of presence of the early Gravettian in situ at Korolevo II in Transcarpathian region.

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Early Holocene occupation of caves and rock shelters in Ružín - preliminary results of new excavation

Adrian Nemergut, Marián Soják & Lucia Popovičová

In the Malý Ružínok valley there are several archaeological cave sites. The Mesolithic site in Medvedia Cave is particularly important, where the skeletal remains of brown bears in the context of slotted bone points and lithic artefacts were found. The cave was not suitable for human occupation. During the 2021 survey, the micro-region was mapped out a number of rock shelters that may have been inhabited during this period. In 2022 excavation was carried out in the Abri Miriama. It lies near the Veľká Ružínska Cave. The superposition of archaeological layers with finds of pottery, lithics, animal bones, malacofauna and charcoals were identified. According to the archaeological material classification and radiocarbon analysis, the layers are dated to Eneolithic, Neolithic and Mesolithic period.

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SESSION VIII



3D Modelling of a possible meat cache of Kammern-Grubgraben

Hannah Parow-Souchon, Thomas Einwögerer, Marc Händel & Norbert Buchinger

The site of Kammern-Grubgraben, dated to the Last Glacial Maximum, is unique in many aspects. Aside from its chronological position, it preserves outstanding constructed features in the form of stone pavements and partly collapsed stone constructions with small walls forming stone heaps. Our excavations are focussed on one of these uprising structures we currently interpret as possible meat cache. The site is under re-investigation since 2015 and several trenches and sections opened new windows into the spatial distribution of the material culture remains. This re-evaluation also includes a new assessment of the site with modern 2D and 3D GIS applications of which we present the first results. It is rare for Palaeolithic sites to include features that cannot sufficiently be documented in two dimensions. Therefore, we are developing a workflow to improve the 3D recording of the stone features, as well as to bring together the past documentation in 2D with the new documentation in 3D.

The aim of this analysis is to reconstruct spatial patterns of the Upper Palaeolithic occupations together with the palaeo-topography of the site in its environs, as well as to assess its post-occupational development to the cultivated landscape dominated by intensive terracing we encounter today.

On the issue of the occurrence of leaf points in Southwestern Slovakia

Ondrej Žaár & Ľubica Žaárová

The paper deals with the phenomenon of the leaf point finds in wider area of Southwestern Slovakia. This artefact is often considered for the "*fossile directeur*" and typologically significant tool type suitable for frame dating. In most papers and publications concerning this theme, there are mostly only few sites mentioned. The most known site is Moravany nad Váhom – Dlhá, a Szeletien site with tens of artefacts considered the richest site with leaf points in Central Europe. Second site is Trenčianske Bohuslavice – Pod Tureckom A and B site, dated to Gravettian culture. In the literature, one can find sporadic mentions of Boleráz, Modrovka, Vlčkovce, Veľký Kolačín or Žabokreky nad Nitrou sites. These sites yielded mostly single, some of them up to several, finds of various types of leaf points. In the last time, there have been some new finds of these interesting artefacts, which stay practically unknown to most researchers. This, together with the older finds, brings the number of Paleolithic sites containing leaf points nearly up to 30. Thus the paper summarizes and reviews these new finds altogether with some older and questionable finds and focuses on spatial extent, finding circumstances, documentation and dating problems of leaf points in the area.

The adornments of the Gravettian site Krems-Wachtberg in chronological and techno-cultural context

Veronika Kaudela

Adornments like pendants, beads and other perforated objects are an important finds category in Upper Palaeolithic sites. Raw materials, production technology, and use-wear can tell us much about the objects and the techno-cultural context of their carriers. Excavations from 2005-2015 at the well-known Gravettian (Pavlovian) site of Krems-Wachtberg provided 110 objects which can be interpreted as adornments. They consist of beads and pins made of mammoth ivory, perforated canine teeth and molluscs, as well as fossil serpulidae. More than half of these objects were found in the context of a single and a double burial of infants. A recently conducted investigation describes all adornments and places these into a chronological and technological context.

Analyses of all objects in this study were carried out using a Keyence VHX 7000 stereomicroscop. Microphotos were produced for all objects and enabled to take a wide range of measurements which would otherwise not have been possible considering the poor state of preservation in particular of some of the mammoth ivory objects. The produced microphotos will furthermore allow for conducting additional non-destructive morphological analyses in the future. Information concerning the preservation of the raw material, use-wear, traces of production, method of perforation, fire exposure and residues were collected in a database.

The recently conducted examination show significant traces of the manufacturing of the adornments. In particular the 53 mammoth ivory beads found in the double burial of twins allowed not only for reconstructing a chaîne opératoire for the manufacture, but furthermore provided interesting information regarding the objects' lifecycle. Polishing on the bridges of some of the pendants' perforations, presumably caused by a thread, and the location of the polished areas in relation to their positions show that some beads had already been worn before being deposited in the burial. This suggests that they were not explicitly made for the infants' burial as previously suggested. Furthermore, it was detected that the beads were not worn in the same way as they were positioned in the grave.

"Follow the river!" – "Really?" What lithic raw material provenance studies can tell us about Upper Palaeolithic mobility patterns and land-use

Marc Händel, Mircea Anghelinu, Norbert Buchinger, Alexandru Ciornei & Michael Brandl

Lithic raw material analyses are an essential component for gaining a better understanding of Upper Palaeolithic hunter-gatherer societies as they can contribute to a broader insight into economic, behavioural, and environmental contexts, and potentially provide indications on land-use patterns, subsistence strategies, and exchange networks. Raw material provenance studies primarily provide geological and geographical information revealing relations between archaeological sites and source areas. Lithic resource management therefore represents a well-suited proxy for an assessment of mobility in hunter-gatherer societies.

Here, we focus on long-distance imports of Cretaceous flint in two Upper Palaeolithic hotspots located at the western and eastern ends of the Carpathians. To the east, the cluster of Upper Palaeolithic sites in the Ceahlău area of the eastern Carpathians in Romania provides the basis for a high-resolution investigation of long-distance lithic raw material procurement throughout a long and dense sequence of short-term and seasonal Gravettian, Epigravettian, Late Palaeolithic and Swiderian hunter-gatherer occupations between 30-13 ka. All lithic assemblages show a component of Cretaceous flint; however, of varying portion and composition. The nearest source for flint, from both primary and secondary positions, is the Middle Prut area located about 150 km to the northeast, while the Middle Dniester area is also attested as source and is located more than 200 km away. At the western end, selected sites of the Austrian Middle Danube Region occupied during the Gravettian and the Last Glacial Maximum covering a timespan of roughly 34-22 ka provide a second case. The portions of flint in the inventories vary significantly suggesting shifts in raw material economy. These sites of the Danube valley are located at a distance of more than 200 km to the closest source area for erratic flint, moraine deposits in the north.

High-quality siliceous raw materials, albeit in varying portions, seem to remain in high demand in the Upper Palaeolithic occupational timespans represented in both find regions. Mobility ranges are similar, while the directions bear a peculiar resemblance: we observe that the movements do not run parallel but rather perpendicular to the major rivers. In the east, the main direction of raw material transport runs northeast-southwest across the large rivers, e.g. Dniester, Prut, Siret, Bistrița, and towards the Carpathians. In the west, the principal transport direction is north-south through the Moravian Gate between the Carpathians and Sudetes, and towards the Danube.

Assuming that raw material procurement is embedded in the general hunter-gatherer subsistence strategies, it seems plausible that these mobility patterns reflect the groups' main moves. The movements' directions perpendicular to major geographic features has significant implications for understanding hunter-gatherer ecology and land-use, as this provided access to a higher diversity of habitat types within given mobility ranges than movements along rivers and mountain ranges where the environmental setting remains widely similar over larger distances. We regard the directions of the main moves chosen by the hunter-gatherer groups as responses to heterogeneous regional and seasonal distribution of resources, and thus as a strategy for optimizing access to these resources.

Invited lecture by Jiří Svoboda

Interdisciplinary approaches to the past: Case of the Czech Paleolithic

Contemporary research transforms the traditional vision of Paleolithic as a story of bones and lithics into a dynamic history of human evolution, migration and adaptation. Actually, paleogenetics introduces some new inspiration. This presentation aims to correlate the new data with fluctuations of Upper Pleistocene climate and fossil archaeo/anthropological record. Focus of our case study is a crossroad of various impulses and traditions just in the centre of Europe - what is today the Czech Republic.

LIST OF CONTRIBUTORS

Abraham Vojtěch

Department of Botany, Faculty of Science, Charles University Benátská 433/2, 128 00 Prague, Czech Republic e-mail: vojtech.abraham@gmail.com

Ambrose Stanley H.

Department of Anthropology, University of Illinois at Urbana-Champaign 607 S Mathews Ave, Urbana, Illinois 61801, United States e-mail: ambrose@illinois.edu

Anghelinu Mircea

History Department, Faculty of Humanities, Valahia University of Targoviște Str. Lt. Stancu Ion 35, 130115 Targoviște, Romania e-mail: mircea_anghelinu@yahoo.com

Augustinová Klára

Institute of Archaeology of the Czech Academy of Sciences, Brno Čechyňská 363/19, 602 00 Brno, Czech Republic e-mail: klaraaugustinova11@gmail.com

Bajer Aleš

Faculty of Forestry and Wood Sciences, Mendel University in Brno Zemědělská 3, 613 00 Brno, Czech Republic e-mail: bajer@mendelu.cz

Bartík Jaroslav

Institute of Archaeology of the Czech Academy of Sciences, Brno Čechyňská 363/19, 602 00 Brno, Czech Republic e-mail: bartik@arub.cz

Bedáňová Alžběta

Institute of Archaeology, Moravian Museum Zelný trh 6, 659 37 Brno, Czech Republic e-mail: abedanova@mzm.cz

Beran-Cimbůrková Petra

Ústav archeologické památkové péče středních Čech Nad Olšinami 448/3, 100 00 Prague, Czech Republic e-mail: petra.cimburkova@uappsc.cz

Beshkani Amir

UMR 7041 – ArScan, AnTET, Maison de l'Archéologie et de l'Ethnologie, Paris Ouest Nanterre La Défense University 21 allée de l'Université, 92023 Nanterre Cedex, France e-mail: a.beshkani@gmail.com

Bobak Dariusz

Foundation for Rzeszów Archaeological Centre ul. Stanisława Moniuszki 10, 35-015 Rzeszów, Poland e-mail: dbobak@lithics.eu

Brandl Michael

Austrian Archaeological Institute, Austrian Academy of Sciences, Vienna Dr. Ignaz-Seipel-Platz 2, 1010 Vienna, Austria e-mail: michael.brandl@oeaw.ac.at

Brzobohatá Kristýna

Department of Experimental Biology, Faculty of Science, Faculty of Science, Masaryk University Kamenice 735/5, 625 00 Brno, Czech Republic e-mail: brzobohata@sci.muni.cz

Buchinger Norbert

Austrian Archaeological Institute, Austrian Academy of Sciences, Vienna Georg-Coch-Platz 2, 1010 Vienna, Austria e-mail: norbert.buchinger@oeaw.ac.at

Bugajska Karolina

Stone Age Department, Faculty of Archaeology, Univeristy of Warsaw ul. Krakowskie Przedmieście 26/28, 00-927 Warsaw, Poland e-mail: karolinabugajska@uw.edu.pl

Carracedo-Recasens Robert

Escuela de Arqueología, Universidad Austral de Chile Balneario Pelluco, Los Pinos s/n, Puerto Montt, Los Lagos, Chile Department of Prehistory, Faculty of Arts and Humanities, Autonomous University of Barcelona 08193 Cerdanyola del Vallès, Barcelona, Spain e-mail: s.rocare@gmail.com

Ciornei Alexandru

Vasile Parvan Institute of Archaeology, Romanian Academy Strada Henri Coandă 11, 010667 Bucharest, Romania e-mail: alexandru.ciornei@iabvp.ro

Čechák Petr

Museum of Eastern Bohemia in Hradec Králové Eliščino nábřeží 465, 500 03 Hradec Králové, Czech Republic e-mail: p.cechak@muzeumhk.cz

Demay Laëtitia

UMR 7194-HNHP, Muséum National d'Histoire Naturelle 1 rue Rene Panhard, 75013 Paris, France e-mail: laetitia.demay@mnhn.fr

Demidenko Yuri E.

Ferenc Rakoczi II Transcarpathian Hungarian College of Higher Education Kossuth Square 6, 902 00 Berehove, Ukraine e-mail: yu.e.demidenko@gmail.com

Doláková Nela

Department of Geological Sciences, Faculty of Science, Masaryk University Kotlářská 267/2, 611 37 Brno, Czech Republic e-mail: nela@sci.muni.cz

Drtikolová Kaupová Sylva

Department of Anthropology, Natural History Museum, National museum Cirkusová 1740, 193 00 Praha, Czech Republic e-mail: sylva.kaupova@nm.cz

Einwögerer Thomas

Austrian Archaeological Institute, Austrian Academy of Sciences, Vienna Georg-Coch-Platz 2, 1010 Vienna, Austria e-mail: thomas.einwoegerer@oeaw.ac.at

Estévez-Escalera Jordi

Department of Prehistory, Faculty of Arts and Humanities, Autonomous University of Barcelona 08193 Cerdanyola del Vallès, Barcelona, Spain e-mail: jordiestevez@icloud.com

Fojtová Martina

Anthropos Institute, Moravian Museum Zelný trh 6, 659 37 Brno, Czech Republic e-mail: mfojtova@mzm.cz

Galuška Luděk

Centre for Slavonic Archaeology, Moravian Museum Velehradská třída 537, 686 01Uherské Hradiště, Czech Republic e-mail: lgaluska@mzm.cz

Garba Roman

Institute of Archaeology of the Czech Academy of Sciences, Prague Letenská 4, 118 00 Praha, Czech Republic Nuclear Physics Institute of the Czech Academy of Sciences Husinec – Řež 130, 250 68 Řež, Czech Republic e-mail: garba@arup.cas.cz

García-Piquer Albert

Department of Anthropology, Washington State University Pullman, WA 99163, United States Department of Prehistory, Autonomous University of Barcelona 08193Cerdanyola del Vallès, Barcelona, Spain e-mail: algoliver36@gmail.com

Gerasimenko Natalia

Department of Earth Sciences and Geomorphology, Geography Faculty, National Taras Shevchenko University of Kyiv 60 Volodymyrska Street, 01033 Kyiv, Ukraine e-mail: natalia.gerasimenko@knu.ua

Gomahr Lorenz

Department of Archaeologies, University of Innsbruck Innrain 52A, 4. OG, 6020 Innsbruck, Austria e-mail: Lorenz.Gomahr@student.uibk.ac.at

Goszłar Tomasz

Faculty of Geographic and Geological Sciences, Adam Mickiewicz University Poznań ul. B. Krygowskiego 10, 61-680 Poznań, Poland e-mail: tomasz.goslar@amu.edu.pl

Gumński Witold

Stone Age Department, Faculty of Archeology, Univeristy of Warsaw ul. Krakowskie Przedmieście 26/28, 00-927 Warsaw, Poland e-mail: w.guminski@uw.edu.pl

Hambach Ulrich

BayCEER & Chair of Geomorphology, University of Bayreuth D 95440 Bayreuth, Germany e-mail: ulrich.hambach@uni-bayreuth.de

Hamdeen Hamad Mohamed

Department of Archaeology, Faculty of Arts, Al Neelain University El gamhuriya avenue, Khartoum, Sudan

Hájek Filip

Freelancer archaeologist Brno, Czech Republic e-mail: filipp.hajek@gmail.com

Händel Marc

Austrian Archaeological Institute, Austrian Academy of Sciences, Vienna Georg-Coch-Platz 2, 1010 Vienna, Austria e-mail: marc.haendel@oeaw.ac.at

Hošek Jan

Czech Geological Survey Klárov 131/3, 118 00 Prague, Czech Republic Centre for Theoretical Study, Charles University and the Czech Academy of Sciences Husova 4, 110 00 Prague, Czech Republic e-mail: jan.hosek@geology.cz

Chlachula Dominik

Institute of Archaeology of the Czech Academy of Sciences, Brno Čechyňská 363/19, 602 00 Brno, Czech Republic Department of Archaeology and Museology, Faculty of Arts, Masaryk University Arna Nováka 1, 602 00 Brno, Czech Republic e-mail: chlachula@arub.cz

Jarošová Ivana

Freelancer anthropologist Brno, Czech Republic e-mail: ivanajar@gmail.com

John Robin

Department of Prehistoric Archaeology, Faculty of Arts and Humanities, University of Cologne Weyertal 125, 50931 Cologne, Germany e-mail: robin_john@web.de

Jurda Mikoláš

Department of Anthropology, Faculty of Science, Masaryk University Kotlářská 267/2, 611 37 Brno, Czech Republic e-mail: jurda@sci.muni.cz

Juřičková Lucie

Department of Zoology, Faculty of Science, Charles University Viničná 7, 128 43 Prague, Czech Republic e-mail: lucie.jurickova@natur.cuni.cz

Kapustka Katarína

Institute of Historical Studies, Faculty of Arts, University of Pardubice Studentská 95, 53210 Pardubice, Czech Republic e-mail: culakova@arup.cas.cz

Kaudela Veronika

Austrian Archaeological Institute, Austrian Academy of Sciences, Vienna Georg-Coch-Platz 2, 1010 Vienna, Austria e-mail: Veronika.Kaudela@oeaw.ac.at

Kmošek Matěj

Institute of Archaeology of the Czech Academy of Sciences, Brno Čechyňská 363/19, 602 00 Brno, Czech Republic e-mail: kmosek@arub.cz

Kononenko Olesia

Institute of Archaeology of National Academy of Sciences of Ukraine pr. Geroiv Stalingrada 12, 04210 Kyiv, Ukraine e-mail: olesia.m.kononenko@gmail.com

Koštová Nikola

Institute of Archaeology of the Czech Academy of Science, Prague Letenská 4, 11801, Prague, Czech Republic e-mail: kostova@arup.cas.cz

Kovačiková Lenka

Laboratory of Archaeobotany and Palaeoecology, Faculty of Science, University of South Bohemia Na Zlaté stoce 3, 37005 České Budějovice, Czech Republic e-mail: lenka.kovacikova@gmail.com

Kulakovska Larissa

Institute of Archaeology of National Academy of Sciences of Ukraine pr. Geroiv Stalingrada 12, 04210 Kyiv, Ukraine e-mail: larissa.kulakovska@gmail.com

Łanczont Maria

Institute of Earth and Environmental Sciences, Maria Curie-Skłodowska University Al. Kraśnicka 2d, 20-718 Lublin, Poland e-mail: maria.lanczont@mail.umcs.pl

Lehmkuhl Frank

Department of Geography, RWTH Aachen University Wüllnerstraße 5b, 52062 Aachen, Germany e-mail: flehmkuhl@geo.rwth-aachen.de

Lemanik Anna

Institute of Systematics and Evolution of Animals, Polish Academy of Sciences ul. Sławkowska 17, 31-016 Kraków, Poland e-mail: lemanik@isez.pan.krakow.pl

Leplongeon Alice

Centre for Archaeological Research of Landscapes, University of Leuven Celestijnenlaan 200E, 3001 Leuven, Belgium UMR CNRS 7194 HNHP, Muséum national d'Histoire naturelle, UPVD 1 rue René Panhard, 75013 Paris, France e-mail: alice.leplongeon@kuleuven.be

Lisá Lenka

Institute of Geology, Czech Academy of Sciences Rozvojová 269, 165 00 Prague, Czech Republic e-mail: lisa@gli.cas.cz

Lücke Andreas

Research Center Jülich GmbH, Institute of Bio- and Geosciences IBG-3: Agrosphäre 52425 Jülich, Germany e-mail: a.luecke@fz-juelich.de

Maier Andreas

Department of Prehistoric Archaeology, Faculty of Arts and Humanities, University of Cologne Weyertal 125, 50931 Cologne, Germany e-mail: a.maier@uni-koeln.de

Mayr Christoph

Department Earth and Environmental Sciences & GeoBio-Center, Ludwig-Maximilians-Universität München Richard-Wagner-Strasse 10, 80333 Munich, Germany e-mail: c.mayr@lrz.uni-muenchen.de

McCool Jon-Paul

Department of Geography and Meteorology, Valparaiso University Kallay-Christopher Hall, 1809 Chapel Drive, Valparaiso, 46383 Indiana, United States e-mail: jonpaul.mccool@valpo.edu

Mlejnek Ondřej

Excellent Research Centre of Archaeometry, Archaeological Centre Olomouc U Hradiska 42/6, 779 00 Olomouc, Czech Republic e-mail: mlejnek.o@seznam.cz

Moník Martin

Department of Geology, Faculty of Science, Palacký University Olomouc 17. listopadu 1192/12, 771 46 Olomouc, Czech Republic e-mail: martin.monik@gmail.com

Moska Piotr

Division of Geochronology and Environmental Isotopes, Institute of Physics, Silesian University of Technology ul. Konarskiego 22B, 44-100 Gliwice, Poland e-mail: Piotr.Moska@polsl.pl

Mroczek Przemysław

Institute of Earth and Environmental Sciences, Maria Curie-Skłodowska University Al. Kraśnicka 2d, 20-718 Lublin, Poland e-mail: przemyslaw.mroczek@mail.umcs.pl

Murătoreanu George

Geography Department, Faculty of Humanities, Valahia University of Targoviste Str. Lt. Stancu Ion 35, 130105 Targoviste, Romania e-mail: muratoreanug@yahoo.com

Nadachowski Adam

Institute of Systematics and Evolution of Animals, Polish Academy of Sciences ul. Sławkowska 17, 31-016 Kraków, Poland e-mail: nadachowski@isez.pan.krakow.pl
Nejman Ladislav

The Australian National University. School of Archaeology and Anthropology. Banks Building, 44 Linnaeus Way, Acton ACT 2601 Australia e-mail: lnejman81@gmail.com

Nemergut Adrian

Institute of Archaeology, Slovak Academy of Sciences Akademická 2, 949 21 Nitra, Slovak Republic e-mail: adrian.nemergut@gmail.com

Neruda Petr

Anthropos Institute, Moravian Museum Zelný trh 6, 659 37 Brno, Czech Republic e-mail: pneruda@mzm.cz

Nerudová Zdeňka

Centre for Cultural Anthropology, Moravian Museum Pisárecká 5, 602 00 Brno, Czech Republic e-mail: znerudova@mzm.cz

Nigst Philip

Department of Prehistoric and Historical Archaeology, University of Vienna Universitätsring 1, A-1010 Vienna, Austria Human Evolution and Archaeological Sciences, University of Vienna Djerassiplatz 1, A-1030 Vienna, Austria e-mail: philip.nigst@univie.ac.at

Nývltová Fišáková Miriam

Department of Physiology, Faculty of Medicine, Masaryk University Kamenice 753/5, 625 00 Brno, Czech Republic e-mail: miriam.nyvltova@med.muni.cz

Oliva Martin

Anthropos Institute, Moravian Museum Zelný trh 6, 659 37 Brno, Czech Republic e-mail: moliva@mzm.cz

Pacák Marek

National Heritage Institute (Regional Office Josefov) Okružní 418, 551 02 Jaroměř – Josefov, Czech Republic e-mail: pacak.marek@npu.cz

Parow-Souchon Hannah

Austrian Archaeological Institute, Austrian Academy of Sciences, Vienna Dr. Ignaz-Seipel-Platz 2, 1010 Vienna, Austria e-mail: Hannah.Parow@oeaw.ac.at

Pasda Kerstin

Institute of Pre- and Protohistory, Friedrich-Alexander-Universität Erlangen-Nürnberg Kochstrasse 4/18, 91054 Erlangen, Germany e-mail: k.pasda@mail.de

Pfeifer Sebastian

Seminar Prehistoric Archaeology, Friedrich Schiller University Jena Löbdergraben 24a, D-07743 Jena, Germany e-mail: sebastian.pfeifer@uni-jena.de

Pia Maiorano Maria

The Institute of Archaeological Sciences, Goethe University Theodor-W.-Adorno-Platz 1, 60629 Frankfurt am Main, Germany e-mail: mp.maiorano27@gmail.com

Pluháček Tomáš

Department of Analytical Chemistry, Faculty of Science, Palacký University Olomouc 17. listopadu 1192/12, 771 46 Olomouc, Czech Republic e-mail: tomas.pluhacek@upol.cz

Pokorná Adéla

Institute of Archaeology of the Czech Academy of Sciences, Prague Letenská 4, 118 00 Prague, Czech Republic e-mail: pokorna@arup.cas.cz

Pokorný Petr

Centre for Theoretical Study, Charles University and Czech Academy of Sciences Husova 4,110 00 Prague, Czech Republic e-mail: pokorny@cts.cuni.cz

Połtowicz-Bobak Marta

Institute of Archaeology, University of Rzeszów ul. Moniuszki 10, 35-015 Rzeszów, Poland e-mail: mpoltowicz@lithics.eu

Popovičová Lucia

Institute of Archaeology, Slovak Academy of Sciences Akademická 2, 949 21 Nitra, Slovak Republic e-mail: luciap.popovicova@gmail.com

Portschy Jennifer

OÖ Landes-Kultur GmbH Schelleingasse 14-16/2/3, 1040 Vienna, Austria e-mail: jenniferportschy@gmail.com

Přichystal Antonín

Department of Geological Sciences, Faculty of Science, Masaryk University Kotlářská 267/2, 611 37 Brno, Czech Republic e-mail: prichy@sci.muni.cz

Pyżewicz Katarzyna

Stone Age Department, Faculty of Archeology, Univeristy of Warsaw ul. Krakowskie Przedmieście 26/28, 00-927 Warsaw, Poland e-mail: k.pyzewicz@uw.edu.pl

Reiss Lilian

Institute of Geography, Friedrich-Alexander-Universität Erlangen-Nürnberg Wetterkreuz 15, 91058 Erlangen, Germany e-mail: lilian.reiss@fau.de

Rose Jeffrey

The National Geographic Society, Ronin Institute 127 Haddon Pl, Montclair, New Jersey 07043, United States e-mail: jeffrey.i.rose@gmail.com

Rychtaříková Tereza

Institute of Archaeology, Brno, Czech Academy of Sciences Čechyňská 363/19, 602 00 Brno, Czech Republic e-mail: nienna11@gmail.com

Soják Marián

Department of the rescue excavation and survey, Subdivision OZV – Spiš, Institute of Archaeology, Slovak Academy of Sciences Mlynská 6, 052 01 Spišská Nová Ves, Slovak Republic e-mail: sojak@ta3.sk

Součková Jitka

Department of Analytical Chemistry, Faculty of Science, Palacký University Olomouc 17. listopadu 1192/12, 771 46 Olomouc, Czech Republic e-mail: jitka.souckova@upol.cz

Standzikowski Karol

Institute of Earth and Environmental Sciences, Maria Curie-Skłodowska University Al. Kraśnicka 2d, 20-718 Lublin, Poland e-mail: karol.standzikowski@mail.umcs.pl

Světlík Ivo

Nuclear physics institute of Czech Academy of Sciences Husinec - Řež, čp. 130, 250 68 Řež, Czech Republic e-mail: svetlik@ujf.cas.cz

Svoboda Jiří

Institute of Archaeology of the Czech Academy of Sciences, Brno Čechyňská 363/19, 602 00 Brno, Czech Republic e-mail: svoboda@arub.cz

Šída Petr

Institute of Archaeology of the Czech Academy of Sciences, Brno Čechyňská 363/19, 602 00 Brno, Czech Republic Department of Archaeology, Philosphical Faculty, University of Hradec Králové Rokitanského 62, 500 03 Hradec Králové, Czech Republic e-mail: sida@arub.cz, petr.sida@uhk.cz

Škrdla Petr

Institute of Archaeology of the Czech Academy of Sciences, Brno Čechyňská 363/19, 602 00 Brno, Czech Republic e-mail: ps8a@seznam.cz

Štefanisko Denis

Department of Archaeology and Museology, Faculty of Arts, Masaryk University Arna Nováka 1, 602 00 Brno, Czech Republic e-mail: dstefanisko@gmail.com

Tvrdý Zdeněk

Anthropos Institute, Moravian Museum Zelný trh 6, 659 37 Brno, Czech Republic e-mail: ztvrdy@mzm.cz

Unger Jiří

Institute of Archaeology of the Czech Academy of Sciences, Prague Letenská 4, 11801 Prague, Czech Republic e-mail: unger@arup.cas.cz

Usyk Vitaly

Institute of Archaeology of National Academy of Sciences of Ukraine pr. Geroiv Stalingrada 12, 04210 Kyiv, Ukraine Institute of Archaeology, Brno, Czech Academy of Sciences Čechyňská 363/19, 602 00 Brno, Czech Republic e-mail: vitaly.i.usik@gmail.com

Vaněček Zdeněk

Department of Botany, Faculty of Science, Charles University Benátská 433/2, 128 00 Prague, Czech Republic e-mail: zdenek.vanecek@natur.cuni.cz

Varadzin Ladislav

Institute of Archaeology of the Czech Academy of Sciences, Prague Letenská 4, 118 00 Prague, Czech Republic e-mail: varadzin@arup.cas.cz

Varadzinová Lenka

Institute of Archaeology of the Czech Academy of Sciences, Prague Letenská 4, 118 00 Prague, Czech Republic Czech Institute of Egyptology, Faculty of Arts, Charles University nám. Jana Palacha 2, 116 38 Prague, Czech Republic e-mail: lenka.varadzinova@ff.cuni.cz

Vereș Daniel

"E. Racoviță" Institute of Speleology, Romanian Academy of Sciences, Cluj-Napoca Clinicilor 5, Cluj-Napoca 400535, Romania e-mail: danveres@hasdeu.ubbcluj.ro

Vila-Mitjà Assumpció

Department of Archaeology and Anthropology, Spanish National Research Council C/ de les Egipcíaques 15, 08001 Barcelona, Spain e-mail: avilamitja@gmail.com

Wilczyński Jarosław

Institute of Systematics and Evolution of Animals, Polish Academy of Sciences ul. Sławkowska 17, 31-016 Kraków, Poland e-mail: wilczynski@isez.pan.krakow.pl

Wissel Holger

Research Center Jülich GmbH, Institute of Bio- and Geosciences IBG-3: Agrosphäre 52425 Jülich, Germany e-mail: h.wissel@fz-juelich.de

Wojtal Piotr

Institute of Systematics and Evolution of Animals, Polish Academy of Sciences ul. Sławkowska 17, 31-016 Kraków, Poland e-mail: wojtal@isez.pan.krakow.pl

Zazvonilová Eliška

Institute of Archaeology of the Czech Academy of Sciences Prague Letenská 4, 11801 Prague, Czech Republic Department of Anthropology and Human Genetics, Faculty of Science, Charles University Viničná 7, 12843 Prague, Czech Republic e-mail: zazvonilova@arup.cas.cz, eliskazazvonilova@gmail.com

Žaár Ondrej

Pamarch s. r. o. Štefánikova trieda 4/7, 949 01 Nitra, Slovak Republic e-mail: ondrej.zaar@gmail.com

Žaárová Ľubica

Pamarch s. r. o. Štefánikova trieda 4/7, 949 01 Nitra, Slovak Republic e-mail: lubica.zaarova@gmail.com Mikulov Anthropology Meeting III

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