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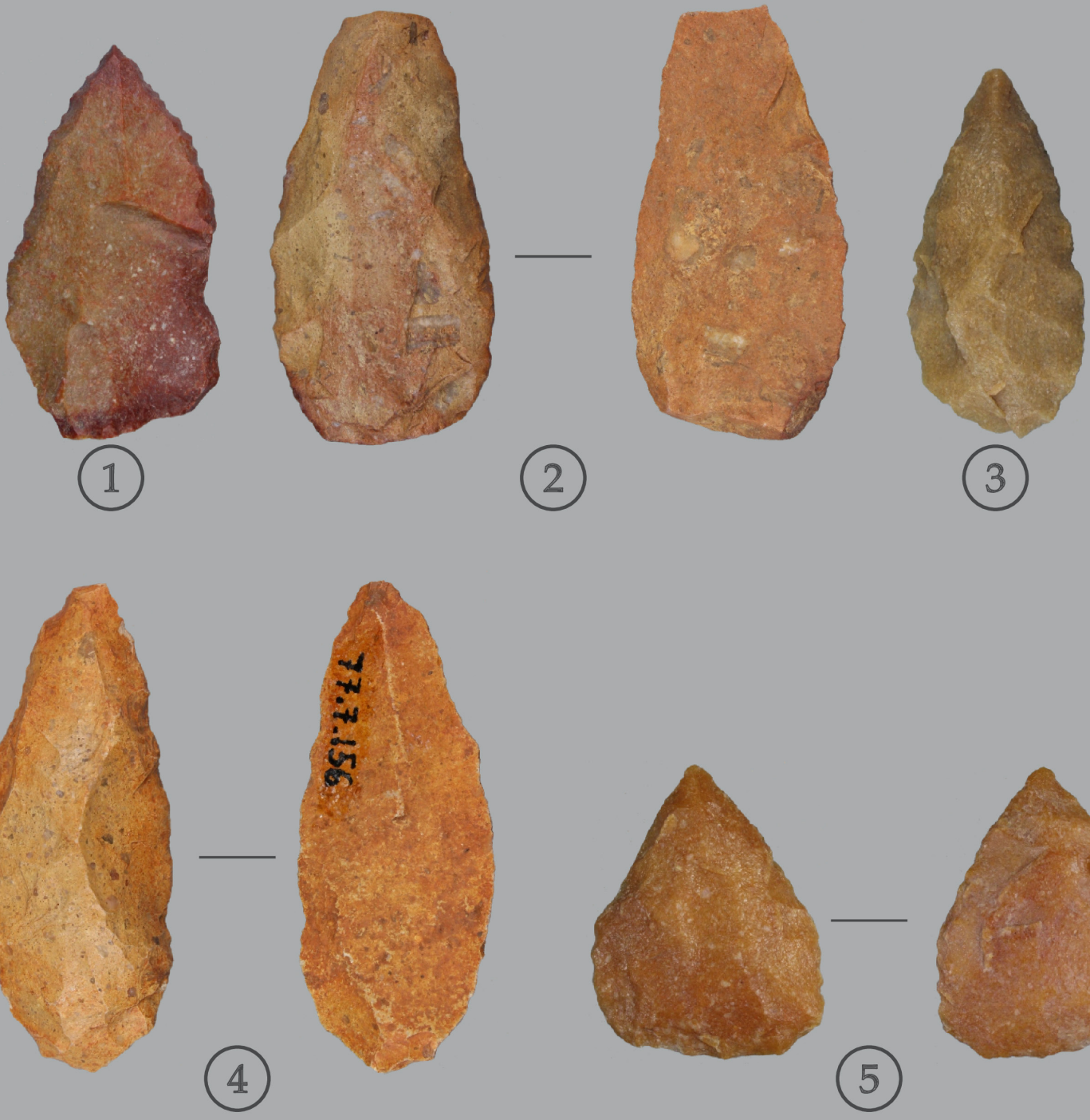

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Szerkesztők • Edited by

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György Lengyel

Attila Király

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REVIEW ARTICLE

Lithic Research Roundtable 11, 2021

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Abstract The eleventh annual meeting of Hungarian lithic specialists was held on December 3, 2021, from 10:00 a.m. to 5:00 p.m. at the Institute of Archeological Sciences of Eötvös Loránd University, Budapest, Hungary. The abstracts of the presentations and posters are as follows.

Keywords *Lithic Research Roundtable, Litikum, Eötvös Loránd University*

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Late Palaeolithic sites in the territories of Kisnémedi and Püspökszilágy (Pest County)

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In the fall of 2021, we started surveys in the outskirts of Kisnémedi and Püspökszilágy in connection with the supervision carried out for the regionally competent Ferenczy Museum Center. Although the area was well researched by the Archaeological Topography of Hungary, no Palaeolithic sites were registered in this ideal topographical setting for hunting camps from the Palaeolithic period. Our ongoing research is concerned with this region. The settlements located in the area of the Kosdi hills link the already known sites on the left bank of the Danube, Szob and Vác, and the Cserhát sites on the Csővár-Verseg-Kálló line, the latter of which can be classified in the Gravettian entity. The use of raw materials is characterized by the predominance of local hydrothermal rocks. Local flint, as well as the distant Carpathian radiolarite, erratic flint and obsidian play a subordinate role. Among the cores, flake cores dominate, which are usually fragmentary. The tools include end-scrapers, burins, retouched blades, backed pieces and marginally retouched bladelets. During the research, some younger prehistoric (Neolithic) settlement spots have been found as well.

Alsódobsza-Kerek-domb, a new Aurignacian open-air site

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The Alsódobsza-Kerek-domb archaeological site (Borsod-Abaúj-Zemplén County) is located on the

high bank of the Hernád River in the outskirts of the Alsódobsza settlement. After a surface collection, we carried out planned excavations at the site in the spring and autumn of 2021 in an area of 7 m2 in the framework of the cooperation between the Várkapitányság Inc., the University of Miskolc and the Polish Academy of Sciences. Based on the preliminary results of the archaeological and pedological processing of the site, the find material comprises a large number of knapped stones and animal bones, of the Early Upper Palaeolithic age, enclosed in colluvial sediment.

Preliminary results of the heavy mineral study of sandstones from the Hódmezővásárhely-Gorzsa Late Neolithic site (Tisza culture)

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In this summary, we present the latest lithological examination results of the sandstone tools of the Hódmezővásárhely-Gorzsa (Tisza culture) Late Neolithic tell settlement, already presented at the 10th Lithic Research Roundtable. Previous studies focused primarily on red sandstones, but at the same time, we distinguish three other types, the grey and the carbonate sandstones, as well as white meta-sandstones. Our goal is to present the preliminary results of heavy mineral tests for these rock types. Heavy minerals are micro-minerals that usually occur in amounts of less than 1% in sandstones, which often have an environmental indicator role, that is, by examining them, we can get information about the origin of the sandstone. With the help of this, we can contribute to the identification of the raw material sources of these tool stones.

Based on the results of our preliminary petrographic studies, four large groups (red-1, red-2, red-3 and red-4) for the red sandstones, two large groups (gray-1 and gray-2) and one individual sample for the grey sandstones, as well as two additional subgroups for the first case (grey-1a and gray-1b) were separated. In the case of the carbonate and white meta-sandstones, the archaeological finds proved to be of homogeneous composition. Our heavy mineral tests show that the four types of sandstone show significant differences in terms of their heavy minerals.

The heavy mineral test results of the red sandstones support the grouping established based on thin-section tests. The red-2 type is the richest in heavy minerals, among which green-greenish-brown tourmaline dominates, zircon and less rutile are also present. Red-4 and red-3 types can be characterized by medium amounts. In the case of the former, the dominant heavy mineral is brown tourmaline, zircon and rutile, but garnet and zoisite are also present. Among the red sandstones, garnet appears only in this type. In the case of the latter type, in addition to the brownish-greenish-brown tourmaline and zircon, smaller amounts of rutile and epidote appear. The fewest heavy minerals occur in the red-1 group, which is characterized by rutile, zircon, and a smaller amount of brown or greenish-brown tourmaline and apatite.

Grey sandstones have a higher heavy mineral content than red sandstones. They can generally be said to contain garnet, except in one sample in which this phase does not appear at all. Two subtypes of the grey-1 type are distinguished from the point of view of heavy minerals. The most common heavy mineral of grey-1a is garnet, with brown-greenish-brown tourmaline, zoisite and rutile, and less commonly zircon, green amphibole, apatite, epidote and titanite. The gray-1b subtype can be characterized by a similar composition, as its most common heavy mineral is garnet, next to which brownish or greenish-brown tourmaline, zoisite and rutile appear, in addition to which zircon, apatite and green amphibole occur in smaller quantities. The most important difference, however, is the appearance of chrome spinel in it, which comes from a different source rock than those listed previously. The gray-2 type is significantly different from the previous ones in terms of its composition, as it contains very few heavy minerals, within which it is characterized by red-brown, almost black, and green or greenish-brown tourmaline, zircon, rutile, and garnet that appears only occasionally. The unique sample mentioned earlier can also be characterized by a different composition, which is evidenced by the complete absence of garnet and the enrichment of zircon, which is characterized by red-brown, almost black, brown and green tourmaline, as well as zoisite and rutile. In all cases, the grains are well-worn, which is also not characteristic of other members of the group.

White meta-sandstones are very poor in heavy minerals. They mainly contain brown or greenish-brown tourmaline, zircon, and rutile, in addition to

smaller amounts of garnet, ortho- and clinopyroxene, epidote, and zoisite.

The carbonate sandstones contain a characteristic heavy mineral assemblage, which is separate from the three groups so far. Its most common heavy minerals are garnet, brown and green amphibole, oxyamphibole, orthopyroxene, epidote, zoisite, brown tourmaline, zircon, rutile, staurolite and kyanite. Less often, tremolite-actinolite, chloritoid and even andalusite occur in them.

Based on the preliminary results, it can be seen that heavy mineral analysis as a method is excellent for separating the types of archaeological finds made of sandstone. Taking this into account, it may be suitable for determining the location of the raw materials, supplemented by the heavy mineral analysis of the source rocks deemed possible based on the fine-grit tests, and the mineralogical analysis of the heavy minerals.

Stone tools surface analysis: method and application on experimental artifacts made of raw materials from the Carpathian Basin

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Current methodological development in use-wear analysis applied to prehistoric stone tools aims at integrating qualitative and quantitative approaches to characterize the surface alterations of the artefacts. Determining the origin of these wears allows us to describe the manufacture and the function(s) of the artefacts and contribute to the understanding of past human behaviours.

The objective of our project is to create an experimental reference collection of stone raw materials from the Carpathian basin, which are found in archaeological sites in Hungary. This collection of surface traces will allow the characterization of the topographic signatures according to the processes of alteration, which generated them. Its detailed qualitative and quantitative analysis aimed at examining 1) what is the variability of surface alterations for and between each tested taphonomic and anthropogenic processes, 2) what repeatable, replicable and standardized protocol can allow to identify and characterize surface topographic signatures of a specific alteration process, 3) what are the appropriate metrological geometric properties, scale, resolution and statistics allowing to discriminate each of the alteration processes.

We propose here to present and illustrate with a few examples the procedure currently being developed within the frame of this project. Therefore, we will present how the reference collection is being created and curated and how the use of interferometric or confocal microscopy can provide high-resolution qualitative and quantitative data to characterize stone tool surfaces.

The project is financed by the NRDI Fund (K 132857), Hungary.

The Istállóskő cave excavation in 2020

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The archaeological chronology of the Istállóskői cave known today was based on the research of László Vértes. The repeated study of the finds and the scientific results collected with the today-inadequate excavation and sampling methods are not suitable for clarifying current scientific questions. A solution can be brought by the exploration of the cave using modern excavation methods, the multidisciplinary processing of the archaeological, paleontological and paleobotanical finds, as well as the sediments containing them. This work was completed in August-September 2020, the partial results of which are presented in this presentation.

Archaeometric study of the metabasite polished stone tools in the Herman Ottó Museum

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The archaeometric study of Neolithic polished stone tools belonging to the archaeological collection of the Herman Ottó Museum began seven years ago as part of doctoral research. The archaeological sites are located in Borsod-Abaúj-Zemplén County, 1 sample each comes from Heves County and "Bereg County" sites. After the primary investigations, it became evident that metabasite stone tools are dominant in the collection. Therefore, the main goal was the detailed mineralogical, petrological and geochemical study of them, as well as the most accurate delimitation of the source area of their possible raw materials. During the tests, we identified 98 metabasite stone axes, which were classified into five rock types and their source areas were also delineated.

Blue slate

The most unique rock type in the collection. Main rock-forming minerals: Na-amphiboles ± Ca-Na amphiboles ± Ca-amphiboles + albite + epidote/clinozoisite ± clinopyroxenes ± garnet + titanite. In addition to these, they may contain subordinate chlorite, pumpellyte, white mica and apatite.

Based on the mineral and rock chemistry and thermobarometric modelling of the rock type, the Mellétei Unit in southern Slovakia can be considered the most probable source area, but in the case of some samples, the conglomerate of the Pieniny ridge cannot be completely ruled out.

Blueschist-greenschist transition facies rock type

Four stone tools were included in this type, which reached the blueschist facies during their metamorphic development, but the signs of the greenschist facies' retrograde metamorphism that affected the rock are strongly reflected in the mineral components and the fabric.

Looking at the mineral components, the quantity of Na-amphiboles appears only subordinately, on the other hand, the quantity of Ca-amphibole and epidote/clinozoisite is significantly present in the stone tools. The assumed source area of this rock type can be the surroundings of the Kisszabos (Slavoška) settlement in southern Slovakia or the Iňačovce-Krichevo unit.

Amphibolite

As amphibolite, I discuss the rock that reached the amphibolite facies during regional metamorphism. The main rock-forming phases are Ca-amphiboles of varied composition and plagioclase, which show a wide chemical composition in amphibolite stone tools. In addition to the mineral and rock chemistry tests, thermobarometric modelling played an important role in identifying the source area. When summarizing the results, we took into account the mineral components, their fabric relations and the pressure-temperature data, comparing them with the data of the possible source areas. Thus, we identified the source areas of the amphibolite stone tools in some units of the Gömörikum, Veporikum and Tátrikum (Slovakia).

Since amphibolite is a common and common rock type in the Western Carpathians, no correlation can be discovered in terms of archaeological typology, chronological and cultural phases either.

Contact metabasite

Stone tools rich in amphibolite that underwent thermal metamorphism were classified as contact metabasites. Based on the rock chemistry data, they were mainly formed from basalt, basaltic andesite protolith. The main rock-forming minerals are Ca-amphibole ± cummingtonite + basic plagioclase + ilmenite. After the mineral-rock chemistry and thermobarometric results, it can be established that the source area of the contact metabasites is located in the Krkonoše-Jizera crystalline unit, in the Jizera Mountains. At the same time, occurrences in Želešice, located in the southeastern part of the Czech massif, are also significant. In the case of two samples, the latter area of provenance, Želešice, is probable, because cummingtonite was missing in the contact metabasites there, and magnetite instead of ilmenite formed the accessory component.

Green slate

Based on the tests, four samples were identified as green slates. We have listed here the stone tools whose mineral paragenesis indicates the maximum metamorphic degree and thus reflects the greenschist facies. The complete rock chemical data of the stone tools are very similar, showing a sub-alkaline basalt composition and tholeiitic character. The typical mineral assemblage of greenschists is actinolite ± magnesio-hornblende ± winchite + albite + epidote/clinozoisite + chlorite + titanite ± augite. Thermobarometric modelling was also performed on one sample, the pressure-temperature data of which show good agreement with the thermobarometric values of the green slates of Gömörikum located near the archaeological site. The mineralogical analysis and the detected phases also support Gömörikum (Slovakia) as a provenance.

By grouping the raw material and temporal distribution of the archaeological finds, it can be concluded that blue slate stone tools no longer appear in the Late Neolithic, in the Tisza culture. At the same time, stone tools made of amphibolite and contact metabase raw materials were used both in the Middle and Late Neolithic.

By grouping the raw material of the archaeological finds and the distances of the possible source areas, it can be observed that in the case of blue slate, blue slate-green slate, amphibolite, and green slate stone tools, the source of the raw material is close (30-200 km away). The contact metabasite stone tools come from the Bohemian Massif, i.e. the raw material source is distant (>200 km).

A new archaeological site with leaf-shaped lithic tools in the Cserhát mountains: Magyarnándor—Dinnyés-parlag

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In the vicinity of the Becske-Júlia-major leaf tool site, which was localized in the spring of 2002 and was described earlier, it was not possible to find a similar type of site before, mainly due to the forested and neglected nature of the potential areas. The area of Magyarnándor-Dinnyés-parlag, located to the north of the site, about 2 km away, was used as a mowing field due to its poor, gravelly soil. Despite several surveys in the area, no archaeological material was found.

For the first time, it was only in the spring of 2021, in barely sprouting grain, that another site with leaf tools was located in the area. During the surface collection, a total of 76 artefacts were collected and measured with a handheld GPS device. The small but homogeneous collection contains 11 tools (end-scrapers, sidescrapers, and leaf tools). In the use of raw materials, the proportion of Cserhát limnosilicite (40 pieces) is only 52.63%, while local quartzite (16 pieces; 21.05%) and quartz porphyry (18 pieces; 23.68%) are significant. The raw material of the two finds is Carpathian radiolarite. During the repeated field walking after the harvest, it was revealed that the grain only served as a cover crop for the clovers planted underneath. The one-time crop sowing was used to renew the area as a mowing field. Thus, further field research is suspended for an indefinite period.

The site is located in the northern Cserhát - about 16 km away from the Ipoly valley - where only one site, the leaf tool site of Debercsény-Mogyorós, was previously known. Based on the article written by András Markó in 2009, the 149 small finds of this site can be compared on a typological basis with the Szeletien industry in Slovakia, Moravia and Bavaria.

Magyarnándor-Dinnyés-parlag, the newly localized site, seems typologically more archaic. However, only a test excavation could determine the nature of the site more precisely.

Microblades and cores in the collections of the Mogyorósbánya – Újfalusi-dombok site

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The examination of the flint and obsidian finds of the Mogyorósbánya Upper Palaeolithic assemblage shows that, in addition to traditional cores, forms that can be morphologically classified as burins (including the previously discussed burin-cores formed on cortical flakes) were used to detach regular, small blade-like shapes. At the same time, the “keel-shaped” (carinated) end-scrapers/cores could presumably have been used for the production of nanoblades, even though they occur only in small numbers in the assemblages.

Based on the available data, in addition to the "pebble" feature, it should be emphasized that the same microblades and cores were made from the local block raw material, Gerecse radiolarite, as from the pebble raw materials. It is also a characteristic feature that in several cases it was possible to document the renewal of cores after accidental breakage and their further use.

Overall, the Mogyorósbánya industry can best be compared with the Szob assemblage, or perhaps the only uncertainly mixed and incomplete Ságvár find, the material from the 1936 excavation. As a working hypothesis, we consider that these assemblages represent the archaeological unit described as Pebble Gravettian.

The studies are being carried out with the support of the Bolyai research scholarship.

Preliminary results of the polished stone tools from the Neolithic Alsónyék site

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A total of 668 polished stone tools were collected in the Neolithic settlement of Alsónyék-Bátaszék (ca. 5800–4500 cal BC) and its burials. The integration of the entire group of finds into the database, itemized and detailed processing began in 2021. In our working method, geologists and archaeologists examine the finds together, keeping in mind the basic principle that both archaeological (typochronological determination, identification of technological features) and geological (lithological determination, identification of raw material groups of stone tools, delimitation of their place of origin) investigations are of equal importance.

Based on the results of our investigations so far, a significant part of the raw material of the polished stone tools comes from the Mecsek mountains close to the site (mainly varieties of Lower Cretaceous alkaline-based magmatites, in addition to smaller amounts of mottled marl, bituminous limestone, and spiculite). In addition to the local rock types found in Mecsek and its immediate surroundings, there are also stone tools made from important long-distance raw materials: mainly serpentinite, contact metabasite (primarily the so-called Železný Brod type), hornfels, "white stone" as well as the less common Na-pyroxenite, eclogite and nephrite, which indicate the regions of the Bohemian Massif, Transylvania, Bánság, and the Alps as sources of raw materials. The primary tool types are shaft-hole axes, stone celts, flat axes (chisels), shoe-last adzes and a macehead. We noticed a correlation between the main rock types and the primary shape of the axes in many cases. For example, of the Lower Cretaceous alkaline magmatites, shaft-hole axes with a characteristic, longitudinally tapering shape on both sides were mainly made, while of white stone squat, flat chisel-axes, and to a lesser extent, shoe-last adzes and maces were made. In the case of long-distance imported stone tools made of exceptionally high-quality raw materials (e.g. contact metabasite, hornfels, and "white stone"), it seems that their size is generally significantly smaller than that of stone tools made of the same raw material unearthed from excavations carried out in areas close to their raw material deposit, and of stone tools made from local raw materials, that is, they were used to the extreme. There is a big difference between the axes found in the graves in terms of their production. Many axes recovered from burials are finely crafted and perfectly polished, with signs of wear that are not visible to the naked eye. At the same time, wear, resharpening, damage and fractures from use can be observed on the stone tools from the site.

Another goal of our work is to establish and clarify the raw material groups and their procurement zones, which we intend to carry out using lithological and geochemical, mostly non-destructive, large-scale instruments. From the archaeological point of view, in addition to the reconstruction of the technological sequence of axe making, we intend to gain new knowledge about the use of the environment, local knowledge and lithology, stone tool production, and burial customs of the Neolithic communities living in Alsónyék, from the perspective of polished stone tools.

Our work is supported by NFKI (OTKA) grant No. K 131814.

New excavations in the Kőlyuk I cave

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Cave excavations defined the first decades of the history of Paleolithic research in Hungary, although the excavations of the open-air sites also started relatively soon. The research of the Kőlyuk I cave in 1950 was not only Ottokár Kadić's last fieldwork but also, it seems, the end of an era. After that, archaeological-paleontological excavations in caves became rarer, and new enterprises almost without exception were forced to return to sites that had already been researched. The new scholar generations were confronted more and more often with an ever-increasing sense of absence since they were often no longer able to "re-read" the "Preface" and "First Chapters" of the stories of the well-known cave sites in lack of their upper layers and partly their documentation.

The Kőlyuk I cave, located in the northern part of the Bükk Mountains, near Parasznya, is a last chance to start to unravel time meticulously, beginning with the present cave floor, in a site that is comparable to our largest prehistoric caves in size. Finds and archaeological phenomena from the Neolithic, Late Bronze Age, and even the Early Iron Age and the Imperial Age have been known from Kőlyuk I for a long time, but our predecessors did not manage to find the legacy of Ice Age man, despite the otherwise extensive excavations. The aim of the research program launched by the Herman Ottó Museum in 2021 and planned for 5-10 years is to explore the Paleolithic period from a stratigraphic, palaeontological and archaeological point of view. We hope that the new information from Kőlyuk I will help to answer open questions from other sites as well. The presentation is a preliminary report on the results of the autumn excavation season of 2021.

The collection from Sajókeresztúr-Szakáll-tető after 20 years

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The Sajókeresztúr-Szakáll-tető site was visited again with the August 2021 excavation at the nearby Méhész-tető, to assess the current state of the plateau located 600–800 m south of the excavated area.

The Palaeolithic research of the area near the towns of Sajóbábony and Sajókeresztúr was first conducted by Árpád Ringer. The archaeological material collected at the Méhész-tető and the Köves-oldal sites, among others, formed the basis for the description of the Middle Paleolithic Bábonyien culture in 1983. In the 1990s, the historian Dr Péter Tóth conducted field walkings in a relatively large area (approx. 400×200 m) on the neighbouring Szakáll-tető. In 2000–2001, the author collected archaeological material west of the transmission line crossing the hill, on the plateau previously researched by Dr. Péter Tóth. This latest collection is presented in this lecture.

In recent years, the abandonment of agricultural activities in the area of Szakáll-tető has resulted in the "re-wilding" of the hilltop, and the localization of former collection sites is becoming more and more difficult. Therefore, the purpose of the presentation is to compare the finds with the previous materials in addition to the approximate chronological classification, as well as to attempt to reconstruct the spatial location of the collections.

Knapped lithics of the Late Neolithic Pusztataskony-Ledence site

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In Hungarian prehistoric archaeology, the first half of the 5th millennium BC saw the development of increasingly complex settlement forms and settlement networks, and the intensification of long-distance connections in the Great Hungarian Plain. The most obvious evidence for the former is the appearance of tell settlements, and for the latter, the widespread distribution of siliceous raw materials coming from a distance of 400–500 kilometres. In recent decades, Hungarian research has been able to outline these phenomena based on the preliminary processing of some outstanding archaeological sites. The next step is the systematic analysis and comparison of these sites; the finds of the Late Neolithic site of Pusztataskony-Ledence offer such an exceptional opportunity. According to our preliminary results, the settlement

without a tell in a marginal position maintained at least as intense relations with regions outside the Carpathian Basin as Polgár-Csőszhalom.

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Excavation of Sajóbábony-Méhész-tető in 2021

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In 2019, we started new excavations at the eponymous site of the Middle Paleolithic Bábonyian culture, Sajóbábony-Méhész-tető, in the framework of French-Hungarian cooperation with the financial support of the French Ministry of Foreign Affairs (MEAE). We reported on the objectives and the first excavation season at the 2019 Round Table. Last year, restrictions related to the global pandemic did not allow the continuation of fieldwork, but the results of laboratory tests and analyses formulated new questions for the 2021 excavation. To further clarify the stratigraphic conditions, by expanding the sondage of the first excavation, we increased the width of the stratigraphic profile, which enabled a more precise interpretation of the geomorphological phenomena. We continued the horizontal excavation in the large section of the first excavation, which supplemented our knowledge regarding the distribution of finds. In our presentation, we present the results of this year's three-week excavation.

Complex study of the Acsa-Rovnya endscrapers: surface collections in the reconstruction of Upper Palaeolithic land use (poster)

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Most of the Upper Paleolithic sites in Hungary are surface occurrences with weak chronological control. However, the technological, morphometric and taphonomic characteristics of the finds, as well as the geographical location of their occurrence, can still be used in regional landscape utilization models. The Early Upper Paleolithic site of Acsa-Rovnya may have played an important role as a base camp in the resource exploitation of the groups using the region due to a large amount of knapped stones, the predominance of end-scrapers, and the strategic position of the site on a hilltop. The duration of site use and, in this context, the archaeological-taxonomic affiliation of its inhabitants are not yet known. In the absence of absolute chronological control, I examined the dominant group of finds, the end-scrapers, to establish the chronological, taxonomic or functional origin of the variability they represent. I grouped the end-scrapers based on their production technologies and metric characteristics using principal component and hierarchical cluster analysis. As a result of the grouping, it became clear that tools showing a mixed picture from a typological point of view can be products of the same tool production and use sequence. This result supports the hypothesis of a similar role of the site in regional landscape utilization, whether the Acsa palimpsest of finds belonging to one or more archaeological cultures.

A mineral marker of long-distance connections: titanic clinohumite in serpentinite (preliminary results) (poster)

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Serpentinite is often found as a raw material for polished stone tools in finds in the Carpathian Basin. However, usually, only a small number of serpentinite tools are found at a given archaeological site. It occurs in greater numbers only in the western and north-western areas of the Carpathian Basin

as a raw material for stone tools (Szakmány 2009). In addition to serpentinite artefacts with a precise archaeological context (or a precisely known site), we will continue our earlier investigations on the material of old collections containing a large number of finds (Miháldy and Ebenhöch collections). In addition to characterizing the raw material of the stone tools, our goal is to draw conclusions about the place of origin of the raw materials and explore the distance relationships that once existed. During the detailed petrological and geochemical tests required for this, to preserve the integrity of the findings, we mainly use non-destructive testing methods, e.g. MS, PGAA, and non-destructive SEM-EDX ("original surface method", Bendő et al 2013).

Although not in the territory of Hungary, serpentinites suitable for making stone tools can be found on the surface in many places around the Carpathian Basin, for example in the "tectonic windows" belonging to the Penninicum of the Eastern Alps in Austria, in the Czech Republic mainly around Brno, in Poland in the Lower Silesian massifs, in Slovakia in the Gömör-Szepes Ore Mountains, in the Maros Valley in Romania, in the Vardar Belt (in the Dinarides) in Serbia, as well as in the territory of Bulgaria and Greece (e.g. in the Rhodope Mountains), etc. (e.g. Majerowicz et al. 2000; Skoczylas et al. 2000; Szakmány 2009; Bernardini et al. 2011, Péterdi et al. 2015). The mineral and chemical composition of most of the above serpentinites is also similar, so it is difficult to select the most probable source area of the raw material of each stone tool. Nevertheless, some typical mineralogical-histological and chemical composition marks can help to determine the source of the raw material of some finds more precisely.

During our current investigations, we found a special mineral phase, titanclinohumite, in the raw material of one of the serpentinite finds from the Miháldy collection (Laczkó Dezső Museum, Veszprém). The presence of titanclinohumite in serpentinite indicates high-pressure rock-forming conditions. In this case, titanclinohumite is present in the company of clinopyroxene (diopside, augite), magnetite, chrome spinel, chromium-containing chlorite, olivine and pentlandite in addition to serpentinite minerals. Serpentinite characterized by such a mineral association is not found in the surroundings of the Carpathian Basin, so in all probability, we are dealing with raw material from a long distance away. Based on literature data, serpentinites containing titanclinohumite can be found on the surface in and around the Western Alps, e.g. In Italy in the Aosta Valley, the Voltri Massif and the Malenco Valley, or the Swiss canton of Graubünden (Grisons) around Puschlav (Poschiavo). (e.g. Sigismund 1949; Scambelluri et al. 1991; Stalder et al. 1998; Compagnoni et al. 2014; De Hoog et al. 2014).

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A stone tool production workshop of the Baden culture in Solymár (poster)

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Geologist István Szenthe, during geological surveying on the ridge on the outskirts of Solymár to the south-southeast of the castle, collected knapped lithic artefacts on the ploughed surface, which he handed over to the National Museum. In the spring of the same year, we inspected the site. Additional finds: trapeze, scrapers, unretouched blades and flakes, cores and pieces of raw material were located and collected. Their raw material, without exception, is Buda hornstone. Presumably, we managed to locate the special stone tool-making workshop of the Late Copper Age Baden culture.

Identification of different values attached to Neolithic stone tools in Central Europe (poster)

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The main focal points of stone tool research are the provenance investigation, the typological and technological analysis of the finds, their temporal and spatial distribution, and the identification of use-wear that prove their former use. Over the past decades, our knowledge of the quantitative and qualitative data of the rocks and tools made from them that are widespread in Central Europe has increased enormously. This fact also promotes the stronger integration of stone tool assemblages and the technological knowledge of their production into social archaeological investigations. It also contributes to the treatment of lithic data as primary information-carrying finds alongside ceramic, radiocarbon and isotopic data. The systematic examination of the discovery, distribution and exchange of stone tools, as well as the research of the value systems of the given community, is an approach that promotes a better understanding of the social and economic role of stone tools in European prehistory.

Value is a subjective concept that is determined by different social interactions, therefore it is very diverse and specific to a community (culture-specific). It is of fundamental importance to get an idea of how in what way and what values and value systems influenced and set the standard for prehistoric societies. A large amount of philosophical, cultural anthropological, ethical and economic literature is available on the concept of value. Based on the work of anthropologist David Graeber, I distinguish three dimensions of values, which are determined by their involvement in different, interconnected spheres of human experience and which can be demonstrated archaeologically: (1) economic transactions, (2) social interactions, and (3) ritual practices. Therefore, to measure different forms of value and to better understand the specific value system of Central European Neolithic communities, I focus on the appearance of stone tools in different archaeological contexts (settlement phenomena, burials and deposits).

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