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ABSTRACTS

Session: Presentations on the Middle and Upper Palaeolithic

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Culture-society or cognitive capability

The transmission of knowledge and skills from generation to generation is one of the key elements of people's lives and culture. Hence, an important question is when this aspect appeared in the evolutionary history of our species. Some researchers believe it already played a key role in producing Mode 1 tools, i.e. chopping tools, including Lomekwian and Oldowan. However, some believe this technological development stage did not require social learning and was based mainly on individual cognitive abilities. Accordingly, social learning would only accelerate the learning process that could have occurred without the transmission of knowledge. Although not everything can be explained by the emergence of social learning, limiting its role only to a stimulator of the speed of change is an untenable view. The comparison of various observational results and experiments shows that biological development coevolved with the social and cultural development of Pliocene and Pleistocene hominins. Social learning, therefore, played a significant role in many areas of contemporary activity, including the effective production of stone tools. It can be assumed that social learning was preferred due to not only the speed but also the range and effectiveness of knowledge distribution, which is of fundamental importance for adapting to specific niches. It is also possible that it was a tool for shaping intra-group relations and could have served as a marker of inter-group identification. In our work, we polemicized with a cognitive hypothesis, which, in our opinion, was based on a controversial methodology, omitting some previous findings in the field of paleosociology and paleotechnology. This hypothesis, announced two years earlier, does not stand the test of time because new works point to the unity of the oldest industries resulting from the durability of cultural transmission.

Adam Kobyłka (Doctoral College of Archaeology, Art and Culture, University of Wroclaw), Jędrzej Woyciechowski (Independent researcher), Andrzej Wiśniewski (Institute of Archeology, University of Wroclaw)

Adaptation to local conditions and needs: New data of technology from the lower level of the Wroclaw Haller Avenue site

Current studies of Middle Palaeolithic technology range from analyses of the direction of the technology's development to its functionality and economic and social aspects. The aim of our paper is to answer the question concerning the factors influencing the strategy of choosing a core reduction method.
Our research was based on artefacts from the lower level of the Wroclaw Haller Avenue site. The level in question is dated to MIS5a/4. Previous research at the site focused on identifying methods of reduction, an examination of the stages of transformation of the lithic raw material, cultural interpretation, and an answer to the question of the reasons for the accumulation of animal bone remains. The artefacts analysed were made from local raw material.
Metric-morphological analyses of the artefacts, i.e. cores and tools, were carried out based on 3D models. Therefore, comparative studies of the reduction products were carried out using the geometric-morphometric method. Finally, we used machine learning.
Preliminary results indicate that the choice of technological strategies was mainly related to adaptation to local raw material and temporary needs. This is demonstrated by the differential use of reduction methods with the highest contribution of the discoidal method. The products show a relatively high degree of similarity despite the different reduction strategy. This in turn suggests that products with optimal properties were pursued.

Andrzej Wiśniewski (Institute of Archeology, University of Wroclaw), Adam Kobyłka (Doctoral College of Archaeology, Art and Culture, University of Wroclaw), Sara Diaz-Pérez (Institute of Archeology, University of Wroclaw), Dominika Tokarz (Doctoral College of Archaeology, Art and Culture, University of Wroclaw), Jędrzej Wojciechowski (Independent researcher), Katarzyna Zarzecka-Szubińska (Department of Paleozoology University of Wrocław), Adrian Marciszak (Department of Paleozoology University of Wrocław)

Hand axe from Draby, Łódź Province and its context

In the area of Central Europe, the occurrence of bifacial-type tools in the Paleolithic is limited to a few industries (the Acheulean complex, > MIS8, the Younger Acheulean assemblages, MIS 8 - MIS 6) and the Central European Micoquian (MIS 5d-MIS 3). Unfortunately, most of the bifacial tools representing Acheulean in the area in question belong to a single specimen, often lacking stratigraphic context.
In 2017, another tool of this type was found near Draby, Działoszyn municipality, łódź province. The tool was in a post-mining heap at the bottom of a disused limestone pit. In this part of the mine, paleontologists and geologists discovered one of several karst cracks filled with cave sediments that no longer exist (paleontological site Draby 5). Based on the analysis of faunal remains found in the cracks, it was determined that these sediments were formed during the Holsteinian Interglacial (MIS 11) or earlier.
In this paper, we present the results of stylistic and technological analyses of the tool, as well as the results of observations regarding the geological context. Preliminary analysis of the artefact, which was made from a local siliceous raw material (Jurassic chert), indicates that it is related to the Acheulean environment. Excavation work undertaken in 2023 revealed the continuation of cave sediments filling the crack but did not result in the discovery of finds.
The field research and sedimentological analysis were carried out as a part of a project of NCN under the OPUS competition (No. UMO -2020/39/B/HS3/02277).

Damian Stefański (Archaeological Museum in Kraków), Andrea Picin (University of Bologna), Jarosław Wilczyński (Institute of Systematics and Evolution of Animals, PAS, Kraków)

Preliminary Report on Excavations in Mamutowa Cave and Kraków-Zwierzyniec 1 (2022-2023)

The presentation reports research conducted in recent years at the sites of Mamutowa Cave and Kraków-Zwierzyniec I. Both sites have been extensively studied since the late 19th and early 20th centuries, revealing unique insights into the Middle and Upper Palaeolithic periods. The research aimed to verify crucial aspects of its stratigraphy, chronology, and cultural content in both cases.
The excavation at Mamutowa Cave (2022-2023) was carried out on the terrace before the cave entrance to verify the presence of preserved stratigraphic layers. It revealed sequences of backdirts from successive excavations. Wet flotation of these sediments unveiled several unique archaeological objects, including Palaeolithic pendants, likely dating back to the 19th century from the everlasting research of J. Zawisza. Beneath this series, a well-preserved sequence of Holocene layers and the roof of Pleistocene layers were discovered, revealing, among other finds, the rich Neolithic settlement at the site. Exploration also yielded a wealth of paleontological material, including macro- and micro- and malacofauna.
Research at the Kraków-Zwierzyniec I site, conducted from 2022 to 2023, was a continuation of excavation from 2013. The research aimed to document the complex stratigraphy of the site and obtain samples of archaeological material to properly identify the recorded cultural units and their chronology. Particularly significant was the meticulous sieving of sediments, which revealed previously unrecorded bladelet blanks. Detailed environmental studies complemented the research.

Jarosław Wilczyński (Institute of Systematics and Evolution of Animals, PAS, Kraków), György Lengyel (Magyar Nemzeti *Múzeum, Budapest)*

Diversity of Late Gravettian lithic inventories of Central Europe - how, when, and why?

Late Gravettian inventories differ fundamentally both in terms of the raw materials used and the technology, as well as the lithic typology and morphology. We can observe the presence of three types of Late Gravettian inventories containing:
- shouldered points and Kostienki knives (in different proportions),
- ventrally retouched rectangles (so-called LG rectangles),
- none of the ones mentioned above (only backed implements)

These dissimilarities observed among sites that– at least at the current stage of research–do not differ neither geographically nor chronologically. The most likely explanation for this variability of the archaeological record stem from ecological reasons that created different subsistence strategies.
In our talk, we will outline the hypotheses explaining the observed differences.
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Dariusz Bobak (Fundacja Rzeszowskiego Ośrodka Archeologicznego), Maria Łanczont (Maria Curie-Skłodowska University), Przemysław Mroczek (Maria Curie-Skłodowska University), Marta Połtowicz-Bobak (Institute of Archaeology, University of Rzeszów), Karol Standzikowski (Institute of Earth and Environmental Sciences, Maria Curie-Skłodowska University)

Dzbańce 21 – epigraweckie obozowisko na Płaskowyżu Głubczyckim

Stanowisko Dzbańce 21 zostało odkryte w 2013 roku w trakcie badań AZP, przez jedno z autorów (MPB) oraz Adama Nowaka z IA UR.
Badania wykopaliskowe prowadzono w latach 2021-2023. Badania geologiczne prowadzą prof. Maria Łanczont i dr hab. Przemysław Mroczek z UMCS.
Stanowisko zlokalizowane jest w południowej części Płaskowyżu Głubczyckiego, na wierzchowinie z pokrywą cienkich osadów lessowych, leżących na plejstoceńskich osadach piaszczysto-żwirowe lub starszych – przedczwartorzędowych (ilaste i mułowcowe łupki karbońskie).
Udokumentowana w wkopach archeologicznych sekwencja osadów pylastych o miąższości do 3,5 m w całości jest zmieniona przez procesy pedogeniczne oraz podścielona przez osady pylasto-żwirowe.
Wyniki datowań OSL potwierdzają złożoną genezę i historię poziomów glebowych. W świetle datowań luminescencyjnych jest to sekwencja osadów z dwóch ostatnich cykli lessotwórczych. Najmłodsza data (21,1±1,4 ka), która została wykonana dla próbki osadów „współczesnego" poziomu Bt2, stratygraficznie odpowiada MIS 2 i wskazuje na górnopleniglacjalny wiek tworzywa lessowego gleby. Środkowe ogniowo (tzw. poziom Bt3) zostało wydatowane na 60±5,1 ka i 57,3±3,7 ka, co pozwala korelować go z MIS 3 i uznać za zredukowaną glebę interstadialną typu komorniki, zaś dolne o wieku OSL 161±12 ka i 183±14 ka stanowi dwudzielny poziom wzbogacania dojrzałej gleby z interglacjału eemskiego (substadium MIS 5e) wykształconej na osadach lessowych zlodowacenia przedostatniego.
Artefakty krzemienne znajdowały się in situ, w warstwie leżącej bezpośrednio poniżej poziomu ornego (Ap), w lessie silnie przetworzonym przez młodsze procesy glebowe. Zabytki spoczywały często w pozycji ukośnej bądź pionowej co wskazuje na lekkie przemieszczenia postdepozycyjne związane prawdopodobnie z wymarzaniem artefaktów, które nie doprowadziły jednak do większych zaburzeń układów przestrzennych.
Odkryto ponad 200 artefaktów krzemiennych. Wszystkie wykonano z lokalnego surowca narzutowego. W odkrytym inwentarzu znajduje się jednopiętowy rdzeń wiórowy, niewielka seria narzędzi w tym drapacze, rylce i seria zbrojników oraz debitaż i odpadki z produkcji. Na powierzchni znaleziono dodatkowo mały, płaski surowiak należący z pewnością do tego samego zespołu. Odkryto także serię ośmiu zębów, potwierdzających obecność na stanowisku renifera.
Charakterystyka inwentarza krzemiennego wskazuje, że odkryte stanowisko należy do górnopaleolitycznego kompleksu epigraweckiego. Warstwa z zabytkami leży ok. 0,3 m powyżej najmłodszej datowanej próbki, co sugeruje wiek stanowiska młodszy niż 21,4 ka.
Na obecnym etapie badań trudno jest odpowiedzieć na szereg pytań, zwłaszcza tych o jednoznaczną interpretację funkcjonalną stanowiska oraz o jego precyzyjną chronologię. Wydaje się jednak, że jest to niewielkie obozowisko grupy przybyłej z południa. Sstanowisko to, także ze względu na swoje prawdopodobne młode datowanie, może być istotnym punktem w dyskusji nad rekolonizacją Europy Środkowej po zakończeniu LGM.
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Petr Neruda (Moravian Museum, Anthropos Institute), Zdeňka Nerudová (Moravian Museum, Centre for Cultural Anthropology)

Hošťálkovice II (Czech Republic) – the Magdalenian or not?

In 2022 a new archaeological horizon (AH3) was recognised at the multilayer open-air site of Hošťálkovice II – Hladový vrch (distr. Ostrava, Czech Republic) site. The preserved area provided scatter of lithic artefacts, in one case in the context of an anthropic structure that consisted from broken sandstone plates, groundtools, knapped lithics, engraved pebble, and charcoals. Refittings and spatial organization of the lithic artefacts show *in situ* knapping processes; some of them related to teaching of knapping skills. Five of the most refitted cores were left on site, without the utilisation of final blanks. Contrary, some final blanks and tools have no adequate cores. Raw material units (RMU) indicate more than ten different materials that are missing at the site. It demonstrates complex raw material economy based on the utilisation of local sources as well as using of imported raw materials. The main problem of AH3 is dating because both 14C and OSL methods placed finds to Holocene. Nevertheless, the style of engraved pebble and tool types indicate the Magdalenian dating of the horizon. The Magdalenian character of lithic technology is discussed in this contribution.

Session: Reading bifaces - five years later. Different technological approaches to bifacial tools

Małgorzata Kot (Faculty of Archaeology, University of Warsaw), Jerzy Tyszkiewicz (Faculty of Mathematics, Informatics and Mechanics, University of Warsaw), Sebastian Miller (Faculty of Mathematics, Informatics and Mechanics, University of Warsaw), Michał Leloch (Faculty of Archaeology, University of Warsaw), Grzegorz Czajka (Faculty of Archaeology, University of Warsaw), Natalia Gryczewska (Faculty of Archaeology, University of Warsaw)

How reliable is the diacritic approach in lithic studies

Scar pattern analysis has been used for over two decades, but no studies have been conducted on its reliability. The paper presents the project's results aiming to test the reliability of the diacritic approach in lithic studies. Based on cores and bifaces knapped under the controlled experiments, we managed to compare the scar pattern analysis results conducted on experimentally knapped pieces with their refittings and estimate the number of mistakes made by people of different expertise, including students, trained archaeologists, lithic specialists and diacritic analysis experts. Consequently, we can present the method's reliability and indicate the procedures that led to the diminishing number of mistakes conducted. As the project's outcome, we propose a WebApp that will enable testing of the number of user mistakes and give feedback to enable further enhancement of the obtained result. The paper will present the basics of the WebApp, which the participants will test during the conference.

Małgorzata Kot (Faculty of Archaeology, University of Warsaw), Jerzy Tyszkiewicz (Faculty of Mathematics, Informatics and Mechanics, , University of Warsaw), Sebastian Miller (Faculty of Mathematics, Informatics and Mechanics, University of Warsaw), Michał Leloch (Faculty of Archaeology, University of Warsaw), Grzegorz Czajka (Faculty of Archaeology, University of Warsaw), Natalia Gryczewska (Faculty of Archaeology, University of Warsaw)

Can we read stones? Another approach

The diacritic approach is based on "reading" the chronology between neighbouring scars on studied lithic artefacts. Every one of us use it to a smaller or larger extent. Some lithic studies approaches, such as working step analysis/scar pattern analysis, are based on scar chronology. The paper presents the first extensive study on the reliability of features, which let us identify the chronology between scars. We tested the features based on over 1750 interscar ridges with an identified list of features. Based on results obtained in the "scar pattern" project within the blind test series of experiments, we were able to evaluate which features are the most reliable in chronology determination. On the top of that we could draw a decisive tree, leading to maximum mistake elimination in the procedure.

Svetlana Kulehsova (Center for Language Evolution Studies, Nicolaus Copernicus University in Toruń, ArScAn-Équipe AnTET (UMR 7041), CNRS, Université Paris Nanterre), Jean Airvaux(Ministère de la culture et de la communication, France), David Hérisson (French National Centre for Scientific Research), Eric Boëda (Université Paris Nanterre France)

Technofunctional study of the bifaces of the collection of La Grande Vallée (France)

In this talk, we will present the results of the technofunctional analysis of the bifaces of the collection of La Grande Vallée, Colombiers, Vienne, France. The collection of La Grande Vallée dates between MIS 13 and MIS 10 and consists of bifaces, flake tools, and small tools (Hérisson et al., 2016). The technofunctional method (Boëda, 2013; Lepot, 1993) consists of reconstructing the *chaînes opératoires* of lithic tools, studying their structure by identifying active and prehensive parts, and finally classifying them by their internal structure. Its aim is to understand the function of a tool through the synergy of its active and prehensive parts. Despite the fact that this method is already widely used on different tools from different periods, including bifaces (e.g., Guilbert-Cardin et al., 2021), this talk aims to demonstrate how it can help us see the diversity of seemingly homogeneous tools, such as bifaces. We will present technotypes based on the tool structure and discuss how they can help us better understand the collection. Contrary to morphological analysis, which ignores the active and prehensive parts, technofunctional analysis allows us to distinguish different types of tools that can be produced on the bifaces. This distinction leads to a better understanding of the notion of biface and breaks the idea of the homogeneity of this type of tool.
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Martyna Lech (University of Tübingen), David Boysen (University of Tübingen), Nicholas J. Conard (University of Tübingen), Harald Floss (University of Tübingen)

Looking for common ground: Multi-site application of consistent methodology in bifacial technology (case study: eastern France and southern Germany)

One of the biggest problems in the study of paleolithic artifacts is the missing of baseline for comparability. In the case of bifacial technology, we face large distances in space and time, that often result in the appliance of a highly specified and individualized method. Consequently, the comparison between sites and chronotypological units is often inconclusive or not possible at all. We present two ongoing projects focusing on sites from MIS4 in southern Germany and eastern France. The assemblages originate from recently excavated and surveyed contexts, including both cave and open-air sites. Both projects are centered on studying bifacial technology, including the occurrence of leaf points and the mass production of handaxes. As an approach to understanding the concepts and technological background of the respective tools, both projects utilize the same methodology. Exemplary, the analysis of the flaking or reduction sequence is carried out on both handaxes and leaf points, based on the methodology presented by M. Kurbjuhn (Kurbjuhn 2005). Consequently, by using the same methodology, we aim to overcome the spatial and typological distance of the studied sites and artifacts.

Session: Presentations on the Late Palaeolithic and Mesolithic

Paweł Valde-Nowak (Institute of Archaeology, Jagiellonian University), Katarzyna Kerneder-Gubała (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Magda Kowal (Institute of Archaeology, Jagiellonian University), Julia Kościuk-Załupka (Institute of Archaeology, Jagiellonian University), Anna Kraszewska Institute of Archaeology, Jagiellonian University, Jakub Skłucki (Institute of Archaeology, Jagiellonian University), Marian Soják (Institute of Archaeology, Slovak Academy of Sciences)

A set of late Paleolithic finds from the Hučiva Cave, Slovak Tatras Mountains

The currently researched Hučiva Cave, located in Tatranska Kotlina, Slovakia, at an altitude of nearly one thousand meters above sea level, is the first site in the Tatra Mountains where Paleolithic monuments have been discovered. They were found in the cave chamber in the large hearth, as well as in its vicinity.
So far, several hundred stone artifacts have been discovered, including bone needles, a shell pendant, and a stone lamp preserved in fragments and fragments of ocher. A rich series of animal bones include the remains of an Alpine ibex, a horse, a lynx, and birds. Seven dates from charcoals and bones indicate the GI-1e period, specifically the second half of the 13th millennium BC.
The stone inventory documents the use of flints from Polish deposits and radiolarite and limnoquartzite. The set of weapons does not match the Paleolithic tool series from that time known from Poland. It is also difficult to compare the series of points with Moravian, Slovakian, and East German inventories. Apart from single equivalents in older finds from the Pieniny Mountains and the Podhale Valley near the Tatra Mountains, there is a clear similarity with inventories from the Netherlands and the British Isles. The interpretation of such distant references is not easy. This leads to the conclusion that the picture of the behavior of late-glacial hunting groups in this part of Europe is much more complicated than it recently seemed.

Damian Stefański (Archaeological Museum in Kraków)

Late Palaeolithic lithic artifacts from the Vistula Valley near Kraków

The lecture promotes a book that summarizes comprehensive studies on the late paleolithic settlement, concentrated in the Vistula Valley near Kraków. This region, nestled between the flysch Carpathian foothills and the limestone Kraków-Częstochowa Upland, is characterized by a diverse landscape and abundant high-quality raw materials attracting settlement throughout the Pleistocene-Holocene transition. The study aims to synthesize available data, primarily focusing on chronology, settlement patterns, raw material procurement, and lithic production. Due to the scarcity of charcoal in dunes and other sandy sites, only a limited number of radiocarbon dates are available. Consequently, the chronology of assemblages primarily relies on typological analogies. Although the presence of arch-backed point societies in the region remains ambiguous and sparse, the prevalence of tanged point settlements is evident, with numerous sites identified. While many of these sites were discovered by antiquarians, modern excavations have contributed significant data to the field. Most assemblages represent the Swiderian (Mazovian) culture. However, recent findings suggest that tanged points may have persisted until the Boreal period, challenging the traditional categorization of these points solely as a paleolithic unit. These late assemblages offer insights into the cultural dynamics of the early Holocene in Eastern and Northern Europe, potentially indicating independent local developments within the tanged point tradition.

Katarzyna Pyżewicz (Faculty of Archaeology, University of Warsaw), Michał Przeździecki (Faculty of Archaeology, University of Warsaw), Witold Grużdź (State Archaeological Museum), Bartosz Kozak (Polish Academy of Science L. & A. Birkenmajer Institute for the History of Science), Dominik Kacper Płaza (Museum of Archaeology and Ethnography in Łódź), Beata Sobko (Museum of Archaeology and Ethnography in Łódź)

Biographies of Swiderian blades – various examples from the Polish territory

We will discuss the issue of using unretouched blades by Swiderian societies. In order to answer the question regarding the function of the artefacts, we analysed macroscopically and microscopically selected blades from five sites: Kołomań Kielce district, Świętokrzyskie voivodship, Sulejówek 4, Mińsk district, Mazowieckie voivodship, Kochlew 1, Krzeczów 2 and Troniny 5, Wieluń district, Łódzkie voivodship. Based on the results, it can be concluded that the unretouched blades, although fulfilling the conditions of being tools, were not used in everyday activities. We can presume that the unretouched blades were usually treated among the Swiderian societies as a waste products, or a elements of exchanges or stock.

Julia Kościuk-Załupka (Institute of Archaeology, Jagiellonian University), Katarzyna Kerneder-Gubała (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Mateusz Słoniewski, (Bio- and Archaeometry Laboratory, Institute of Archaeology and Ethnology, Polish Academy of Sciences)

Can we examine the direct contacts between Late Palaeolithic communities? Mineral pigments found in the chocolate flint mine in Orońsko, Central-Southern Poland

Orońsko, dating back to the Late Paleolithic period around 12,800 BP, is renowned for its extraction of chocolate flint. Archaeological excavations conducted between 2016 and 2022 revealed well-preserved mining facilities and tools made of flint, bone, and antler, indicating intense mining activity. Some of the artifacts found showed traces of red dye, initially classified as ochre.

The first hypothesis relates to the possibility of contact with contemporary communities in Rydno, where ochre exploitation was prevalent. It is possible that there was an exchange of raw materials, with chocolate flint from Orońsko and ochre from Rydno.
The second hypothesis suggests that the dye was extracted from ferruginous clays located near the site, as glacial and weathered clays are present. The colour of the clay layers in the upper parts of the mining shafts may have been altered by heating, as observed during excavation.
To determine the most probable hypothesis, physicochemical and analytical tests were conducted on the dye traces found on the surface of the tools, as well as dye samples obtained from the ochre mine area in Rydno and local clays from Orońsko. An experimental method was also employed, which involved firing clays.

Wojciech Bronowicki (Institute of Archeology, University of Wroclaw), Marcin Chłoń (Institute of Archeology, University of Wroclaw), Tomasz Płonka (Institute of Archeology, University of Wroclaw)

Forgotten, but not lost – macrolithic tools of Mesolithic hunter and gatherers

The Mesolithic is most often recognised by the use of microlithic tools, predominantly made of various types of flint or other siliceous rocks. For this reason, lithic objects, such as axes, adzes, hoes and maces, are often misinterpreted and dated to later periods, usually the Neolithic. Our knowledge about these types of macrolithic tools seems to be currently forgotten in the Polish Mesolithic studies. There is a visible discontinuity of the German research from the period before WWII in this field of study.
In this paper, we present the examples of the tools in question, named *Geröllkeulen* (mace-heads), *Spitzhauen* (hoes or adzes) and *Walzenbeilen* (axes/adzes) and their distribution in SW Poland. The first aim of the study is to associate them to the European horizon of these macrolithic tools, and describe what is currently known about them in locations, outside of Poland.
In the second part of the paper, we will focus on presenting preliminary results of multifaceted analyses of selected specimens: mace-heads and an axe/adze from the Museum of Silesian Piast in Brzeg, and from the City Museum in Wrocław. The research procedure included archival query, typo-morphological and use-wear analysis, and experimental tests. In the study we focus on the manufacturing process, the type of activities they were used for, and possible function.
This study is part of a project supported by the National Science Centre, Poland (2020/38/E/HS3/00285).

Session: Presentation on lithic sources and experiments

Dagmara H. Werra (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Magdalena Sudoł-Procyk (Institute of Archaeology, Nicolaus Copernicus University), Katarzyna Kerneder-Gubała (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Magdalena Malak (Institute of Archaeology, Nicolaus Copernicus University), Sara Mandera (Institute of Archaeology, Nicolaus Copernicus University), Tomasz Boroń (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Maciej T. Krajcarz (Institute of Geological Sciences, Polish Academy of Sciences)

"*Chocolate flint" on fire* - verifying the validity and effectiveness of macroscopic classification

In the Odra and Vistula basin, there are outcrops of high-quality siliceous rocks that were intensively used by prehistoric communities. 'Chocolate flint' played a significant role among them. This raw material was used significantly by prehistoric communities from the Palaeolithic to the Late Bronze Age (and even the Early Iron Age) almost throughout Central Europe. Outcrops

and mines in the form of small and shallow features, shafts, deep shafts with niches, and unique types of galleries are known.
The research on 'chocolate flint' has been ongoing for over one hundred years, focusing on its characteristics, the localisation of deposits, and its use and distribution. This discussion is still growing. One reason for this situation is that the 1971 proposal by R. Schild on how to characterise a 'chocolate flint' and to distinguish 11 groups has never been verified in the light of discoveries made over the last half-century.
The second reason for this situation is the fact that in two regions - the north-eastern margin of the Świętokrzyskie (Holy Cross) Mountains and the Krako w-Częstochowa Upland, there were independent extraction centres of 'chocolate flint'. In both those regions, there are currently ongoing excavations - in the area of the Krakow-Częstochowa Upland (Udorka Valley), a mining site dated to the Final Palaeolithic, Early Mesolithic and Neolithic; in the Świętokrzyskie Mountains (Orońsko region) a mining site dated to the Final Palaeolithic and Late Mesolithic.
The possibility of differentiating flint from these two mining zones is crucial in examining its conveyance/exchange because it directly translates into reconstructing the actions of the prehistoric communities. The diversity of the raw material, its importance, and places of exploitation will be presented during the presentation. An attempt will also be made to solve the problem of macroscopic separating this raw material and the validity of such an approach.
The study on 'chocolate flint' from Krakow-Częstochowa Upland was funded by the National Science Centre, Poland, grant 2018/30/E/HS3/00567 implemented at the Nicolaus Copernicus University in Torun . Research in the north-eastern margin of the Świętokrzyskie Mountains is carried out as part of projects implemented at the Institute of Archaeology and Ethnology Polish Academy of Sciences in Warsaw funded by the National Science Centre, Poland, grants: 2011/03/N/HS3/03973, 2015/17/N/HS3/01279, and 2017/25/B/HS3/01224.

Sara Mandera (Institute of Archaeology, Nicolaus Copernicus University), Magdalena Sudoł-Procyk (Institute of Archaeology, Nicolaus Copernicus University), Maciej T. Krajcarz (Institute of Geological Sciences, Polish Academy of Sciences)

“Chocolate flint” from the Kraków-Częstochowa Upland – occurrence and characteristics of the raw material

“Chocolate flint” was one of the most important chert raw materials used from the Late Palaeolithic to the Late Bronze Age in Central and Eastern Europe. Previous reconstructions of the former economy based on the distribution of “chocolate flint” were simple models, assuming the extraction of chocolate flint only from the Holy Cross Mountains (HCM) in south-central Poland, where, as it was believed until recently, its only deposits were located. However, the discovery over a decade ago of deposits and a prehistoric mine of this raw material located approximately 200 km to the southwest, in the Kraków-Częstochowa Upland (KCU), suggests that the existing interpretations related to the extraction, use and distribution of this raw material in prehistoric times must be supplemented with new knowledge.
This paper presents the goals, methodology and the first results of one’s of co-authors (S.M.) PhD project, supervised by two other co-authors. The PhD project involves geoarchaeological methods: mapping of outcrops through a field reconnaissance survey; identification and characterization of potential deposits; recognition of the raw material petrological and geochemical variability; and finally reconstruction of provenance for archaeological artifacts. The ongoing field survey resulted in the discovery of a new outcrop, as well as the characteristics of its raw material. Due to the macroscopic similarity of the HCM and KCU varieties, it is necessary to use a more advanced interdisciplinary approach, including detailed microscopic and physico-chemical methods, to find features that allow differentiating between varieties.
This work was conducted within the “Chocolate flint on the Kraków- Częstochowa Upland. Mining, use and distribution” project supported by the National Science Centre, Poland, grant 2018/30/E/HS3/ 00567. The petro-geochemical analyses were additionally co-funded by

Nicolaus Copernicus University in Toruń, Poland, within the programme Excellence Initiative – Research University, grants: 90-SIDUB.6102.20.2022.MD3 and 4101.00000070, 03.01.00003785.

Dagmara H. Werra (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Rafał Siuda (Faculty of Geology, University of Warsaw)

***This will be a piece of cake* - characterising obsidian artefacts from Poland using pXRF**

Stone has been the most pervasively preserved artefact throughout most prehistoric times since the first appearance of stone tools. Characterisation and differentiation of particular lithic raw materials help archaeologists re-construct prehistoric community activities. One of them is obsidian, a volcanic glass. Research on obsidian use by prehistoric communities has a long history. In Poland, Marian Wawrzeniecki correctly identified artefacts made of this material with the help of geologist Jan Lewiński and published in 1903. Afterwards, much research was carried out on obsidian, many publications were published. Today, we have obsidian from Poland recovered from several hundred archaeological sites.
Obsidian is natural glass that was originally molten magma associated with a volcano. Depending on the source, obsidian contains different compositions of trace elements. This feature gives this raw material created within a single volcanic eruption a unique range of elements present in varying amounts - a unique fingerprint.
Research in geochemistry and archaeology has developed practical analytical methods based on stud-ying a range of chemical compositions. This information is used to indicate geological sources and re-construct prehistoric exchange relationships.
The presentation will challenge the myth that obsidian is an "easy" rock to study. We will also present the advantages and disadvantages of using portable X-ray fluorescence analysers (pXRF).
Acknowledgements: The research was funded by the National Science Centre, Poland (grant No 2018/29/B/HS3/01540).

Witold Migal (State Archaeological Museum in Warsaw), Witold Grużdź (State Archaeological Museum in Warsaw)

Strike a figure – experimental case studies

The lithic technologies used by Magdalenian societies on the territory of Poland were quite well investigated, especially in the case of blade technologies. Nevertheless, the tools and forms made from flakes weren't the aim of more insightful studies. We analysed the morphology of retouched forms from "Mały Gawroniec" and conducted knapping experiments. In our research, we focused on *figurines*, which we tried to place within "*chaîne opératoire"* of the Magdalenian concept of blade reduction.

Session: Presentations on the Neolithic and Early Bronze Age

Marcin Chłoń (Institute of Archaeology, University of Wrocław), Bernadeta Kufel-Diakowska (Institute of Archaeology, University of Wrocław), Michał Borowski (Institute of Archaeology, Maria Curie-Skłodowska University), Wojciech Bronowicki (Institute of Archaeology, University of Wrocław), Melchior Czarnik (Institute of Archaeology, University of Wrocław)

For how long did it last? Use and recycling of metabasite tools of the Linear Pottery culture in southwestern Poland

The first farmers who reached the areas north of the Sudety Mountains are associated with the Linear Pottery culture (LBK). Over time, some components of the LBK material culture have changed while others have remained the same. The spread of metabasite tools can be considered an example of macrolithic tools being part of a Neolithic package. Various types of stone tools are found at the LBK settlements located at a distance from the metabasite outcrops in the Jizera Mountains (Bohemian Massif). This behaviour can be described as conservative, especially considering good access to various local rocks and erratic resources. In our research, we would like to focus on the human behaviour behind the prolonged use-life of tools.
For this study, we selected a collection of metabasite objects from Lower Silesia and Opole Voivodeship, SW Poland. The collection (n = 93) includes findings from several excavated LBK settlements (Skoroszowice 1), multicultural sites (Kostomłoty 27, Strachów 2/2a, Strzelin 16, 19 Jordanów Śląski 5, Stary Zamek 2), stray finds (Malerzowice Małe 2, Pieszyce 17, Ligota Wielka 9), and tools found in younger cultural contexts (e.g. Zarzyca 6, Miłosławice 6, Raczyce 3).
Identification of production methods, stages of utilization, and re-use of the metabasite objects were based on use-wear analysis. Our research was accompanied by an experimental program that provided the reference collection and allowed us to answer questions that arose during the research.
Studies are supported by the National Science Centre (NCN), Poland, decision No: 2020/38/E/HS3/00285.

Marcin Dziewanowski (Prac. Arch.- Kons. "Jastrzębiec")

The stone production in LBK as the frontier of multifacial concepts- the theme in the light of recent studies

Since 2017 author excavated relicts of about 35 households of LBK in Lower Odra region. According to the concept of field excavations, a huge amount of pits were completely or partially sieved. As a result, a huge amount of artifacts (pottery, flints, stones, as well as botanical and special-organic materials) were obtained. The most important is that there are a lot of tools and byproducts from highly advanced stone production. According to the very first results of studies it is possible to reconstruct the processes, describe the concepts and point the relations between the idea of production of LBK stone querns and much later flint axes.

Marcin Dziewanowski (Prac. Arch.- Kons. "Jastrzębiec")

Stone artifacts on LBK-sites on Lower Odra region and their importance for model of research called "indepth reading"

Since 2017 author excavated relicts of about 35 households of LBK in Lower Odra region. According to the concept of field excavations huge amount of pits was completely or partially sieved. In result, huge amount of artifacts (pottery, flints, stones, as well as botanical and special - organic materials) was obtained. In the presentation there will be discussed the most important aspects of stone finds and some tasks connected with organisation of the stone production. The

special context of the story is relation with other type of sources, that together makes the picture of the household very original and fascinating.

Marcin Dziewanowski (Prac. Arch.- Kons. "Jastrzębiec")

Untypical flint production and tool usage in LBK on site Mierzyn 5 in the light of excavations on Middle Ages site in Pełczyce

Since 2017 author excavated relicts of about 35 households of LBK in Lower Odra region. According to the concept of field excavations huge amount of pits was completely or partially sieved. In result, huge amount of artifacts (pottery, flints, stones, as well as botanical and special - organic materials) was obtained. It let us build reliable concept of flint procurement in statistical sense- in result very obvious sims to be some atypical artifacts or clusters of flints. In the presentation there will be presented flint production in LBK to point, that cluster of tools from household 10 (pit WJ1) is really atypical. There will be made afford to change the way we think about flint tools usage, through presentation of cluster from Closter in Pełczyce where huge amount of flints (tools, flakes, bipolar cores) was discovered.

Iwona Sobkowiak-Tabaka (Faculty of Archaeology, Adam Mickiewicz University)

Nowe spojrzenie na wytwórczość krzemieniarską społeczności późnej ceramiki wstęgowej na obszarze Wielkopolski

W ostatnich latach, dzięki prowadzonym inwestycjom szerokopłaszczyznowym, liczba osad identyfikowanych ze społecznościami kultury późnej ceramiki wstęgowej w Wielkopolsce znacząco wzrosła. Dotychczas późnowstęgowa wytwórczość krzemieniarska była głównie analizowana w kontekście osad znajdujących się na Równinie Kościańskiej i w okolicach Poznania. Jednakże, nowo odkryte zespoły osadnicze i pracowniane w różnych częściach regionu otwierają nowe możliwości dyskusji nad charakterem, jakością i przemianami krzemieniarstwa wspomnianych społecznościach.
W referacie przedstawione zostaną najnowsze wyniki analiz technologiczno-typologicznych oraz badań surowcowych, dotyczących głównie niepublikowanych jeszcze zespołów. Te nowe dane pozwolą na dokładniejsze zrozumienie procesów produkcyjnych oraz różnic w technologiach między poszczególnymi osadami.

Julia Pasławska (Faculty of Archaeology, Adam Mickiewicz University)

Neolityczne materiały krzemienne ze stanowiska Zagaje Smrokowskie

W trakcie archeologicznych badań ratowniczych na stanowisku 16 i 16A w Zagajach Smrokowskich, gmina Miechów odkryto pozostałości osady społeczności kultury malickiej, w postaci kilku obiektów o zróżnicowanych funkcjach oraz materiału ruchomego (m.in. ceramiki, artefaktów kamiennych i kości zwierzęcych). Do najważniejszych z nich należy owalna jama oznaczona nr 3, z której pozyskano ponad 200 artefaktów krzemiennych, pochodzących z pierwszych faz obróbki krzemieniarskiej (obłupnie, wióry/odłupki korowe, odłupki zaprawiakowe oraz rdzenie). Obiekt uznano za pracownię obróbki krzemienia jurajskiego podkrakowskiego, odmiany A. Analogiczna pracownia tego typu znana jest ze stanowiska nr 10 i 11 w Targowisku. Celem wystąpienia jest prezentacja wyników analizy technologiczno-typologicznej i surowcowej ponad 330 artefaktów wykonanych z surowców krzemiennych i obsydianu. Wybrane artefakty poddane zostały także badaniom traseologicznym.

Piotr Mączyński (Institute of Archaeology, Maria Curie-Skłodowska University)

Sztylety krzemienne w kulturze mierzanowickiej – przedmioty codziennego użytku czy insygnia władzy

W ramach wystąpienia zaprezentowany zostanie głos w dyskusji na temat idei wykorzystania sztyletów krzemiennych przez społeczność kultury mierzanowickiej (2300-1800 BC). Przedstawione wyniki badań oraz rozważań w znacznej mierze opierać się będą na rezultatach analiz funkcjonalnych oraz porównawczych.
Autor przewiduje również prezentację materiałów źródłowych (sztyletów, sierpów, może i siekier) znajdujących się w zbiorach Instytutu Archeologii UMCS.

Poster session

Dariusz Bobak (Fundacja Rzeszowskiego Ośrodka Archeologicznego), Maria Łanczont (Maria Curie-Skłodowska University), Marta Połtowicz-Bobak (Institute of Archaeology, University of Rzeszów)

Osadnictwo paleolityczne w strefie nadsańskiej – nowe dane

San – jedna z największych i najważniejszych rzek polskich, odgrywał ważną rolę przez całe pradzieje, w tym także w starszej epoce kamienia, kiedy to wyznaczał ważną granicę pomiędzy zachodem a wschodem w odniesieniu do uwarunkowań kulturowych. Rzeka ta stanowi naturalny szlak komunikacyjny oraz korytarz ekologiczny dla migracji roślin i zwierząt. W strefie przedgórskiej tereny po obu stronach rzeki charakteryzują się kontrastowością krajobrazu: dno doliny jest szerokie i płaskie, zaś tereny przyległych wysoczyzn lessowych – urozmaicone. Strefa pograniczna wysoczyzn i doliny stwarzała dogodne warunki środowiskowe dla osadnictwa w plejstocenie.
Osadnictwo paleolityczne w obszarach strefy nadsańskiej jest jak dotąd słabo rozpoznane, ale kolejne lata badań dostarczają coraz to nowych danych pokazujących istotną rolę rzeki i terenów sąsiadujących z jej doliną jako szlaku komunikacyjnego łączącego Karpaty z Kotliną Sandomierską. Najstarsze ślady sięgają paleolitu środkowego, reprezentowanego przez dwa stanowiska. Więcej śladów pochodzi z końca górnego i początków schyłkowego paleolitu.

Kacper Baranowski (Department of Environmental Archeology & Human Paleoecology, Institute of Archaeology, Faculty of History), Magdalena Sudoł-Procyk (Institute of Archaeology, Nicolaus Copernicus University), Grzegorz Osipowicz (Institute of Archaeology, Nicolaus Copernicus University)

Flint inventory from magdalenian workshop site in Kleszczowa 9. Typology, raw material and functional analyses

The site at Kleszczowa 9 is a newly discovered Magdalenian workshop type site located in the central part of the Kraków-Częstochowa Upland within the region of the so-called Barańskie Mountains, within a distance of ca. 7 km from the locality named Pilica, Silesian voiv. (Sudoł 2016). In the course of the field survey and trial excavations conducted in the area of the site since 2012 relics of the Late Palaeolithic settlement were discovered. Over the following years the site was regularly surface surveyed, while in 2016 a survey research was carried out within the site, which revealed the presence of loess layers "in situ". The site, as one of the few Magdalenian sites in this part of the Kraków – Częstochowa Upland, is an important voice in the discussion concerning the distribution of flint raw material from this part of the Polish lands.
By 2024, a total of 1089 flint artefacts had been recorded. The inventory is diverse in terms of typology and raw material. The vast majority (69.7%) of the inventory consisted of flakes and

blades, including those with the *en éperon* technique applied. In addition to this, endscrapers, perforators, burins, including, among others, a Lacan-type burin, so-called extraction tools and relatively numerous cores from all phases of exploitation were registered. In recent years, the flint inventory from Kleszczowa 9 was presented in terms of the results of typological-technological (Sudoł 2020) and raw material analyses (Baranowski, Sudoł - Procyk 2023).
The initial functional analysis, which focused on the analysis of 70 flint artefacts, allowed a partial addition to the existing knowledge of the site in the context of the undertaken activities. Tools for typical work such as wood planing and sawing, meat and leather processing, as well as less typical ones such as tools with traces of siliceous plant processing (e.g. reeds) were recorded. In addition, the analysis made it possible to verify the legibility of the utilitarian traces against the background of postdepositional damage, which is a fundamental issue given the surface nature of the site. This facilitated the establishment of future research perspectives. The number of traseological analyses is still unsatisfactory as it was carried out on around 20% of all Magdalenian sites (Połtowicz – Bobak 2013, Pyżewicz 2022). The presentation of the preliminary results of the assemblage from Kleszczowa 9 will allow to partially fill this area of knowledge and to consult the results and research plans with a group of specialists in the field of Magdalenian culture.
Field research at the site was financed by the grants from the National Science Centre, Poland, Nos. 2011/01/N/HS3/01299, 2014/15/D/HS3/01302 and 2018/30/E/HS3/00567. The functional analysis was carried out as a part of the grant from the National Science Centre, Poland No. 2014/15/D/HS3/01302.
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Elżbieta Ciepielewska (State Archaeological Museum in Warsaw)

Workshop, waste heap or windfall pit? Some initial remarques on spatial distribution of flint materials from Swiderian concentrations at Michałów-Piaska site (Rydno)

At Michałów-Piaska (Skarżysko-Kamienna County) several swiderian flint concentrations spread in the area of circa 1500 square metres were excavated in years 1995-2007. Exact documentation of flint pieces in three dimensions encourages spatial analysis of the complex. The biggest (and most mysterious) kshemienitza I/96 will be analysed with GIS method. Waiting for results of this analysis and for results of reffiting method, the attention was directed to different inner patterns of flints distribution in concentrations and their relation to post-depositional structures. On a sandy terrace of Kamienna river these are mostly windfall pits and gravel heaps.

Jakub Mugaj (Institute of Archaeology and Ethnology Polish Academy of Sciences), Jacek Kabaciński (Institute of Archaeology and Ethnology Polish Academy of Sciences)

Early Holocene settlement in the Middle Noteć Valley. A new Mesolithic site at Ujście, Greater Poland

Poster present preliminary report on site at Ujście in Greater Poland and its potential for future research on Mesolithic settlement in Central European Plain. The site was registered due to discoveries of antler tools at the turn of the 19th and 20th centuries during Noteć river regulation. The surface survey in 2014 and test excavation in 2017 confirm the presence of Mesolithic settlement at the terrace of Noteć river of potentially Early Holocene chronology.

Kamil Makuła (Institute of Archaeology, Jagiellonian University)

Próby zastosowania morfometrii geometrycznej w badaniach nad trapezami typu Luta

Klasyfikacja trapezów typu Luta nie jest dobrze rozpoznanym zagadnieniem w literaturze traktującej o mezolicie Polski, pomimo tego, że w terminologii opisującej materiały krzemienne istnieje od przeszło półwiecza – pierwszy raz nazwa ta została zaproponowana przez H. Więckowską na początku lat 70. XX wieku. W swojej pracy magisterskiej autor plakatu wykorzystuje dwuwymiarową geometryczną morfometrię, aby podjąć próbę doprecyzowania istniejącej klasyfikacji, czego pierwsze efekty są prezentowane w tej sesji posterowej. Jak udało się zaobserwować, eponimiczna grupa trapezów przedstawia znaczne zróżnicowanie morfometryczne, pomimo wspólnej proweniencji. Możemy dostrzec wydzielające się formy o najbardziej skrajnych cechach, a także formę najbliższą do uśrednionego kształtu wszystkich okazów z analizowanego zbioru. Autor uważa, że rozszerzenie wybranej grupy o zestawy i okazy reprezentujące różnorodne stanowiska, pozwoli nam dostrzec inne prawidłowości, niewidoczne bez zastosowania analiz morfometrycznych – co w dalszym procesie może nam pomóc w zrozumieniu fenomenu, jakim są trapezy typu Luta.

Hubert Binnebesel (Institute of Archeology, Nicolaus Copernicus University in Toruń)

What happened to the flint workshops in the Udorka Valley? A geoarchaeological project of searching for the original place of deposition of artifacts from the mining field at site 24 in Poręba Dzierżna (Lesser Poland Voivodeship, southern Poland) using spatial analysis

Systematic interdisciplinary excavations in the prehistoric chocolate flint mine in the Udorka Valley (site 24 in Poręba Dzierżna, Lesser Poland Voivodeship, Poland) have been conducted since 2018. The study was supported by the National Science Centre, Poland (grant number 2018/30/E/HS3/00567). A special feature of this mining field is the well-preserved relief and location on a steep slope. Currently available dating indicates that the extraction of the raw material took place in the Early Mesolithic, but a multi-phase nature of the site cannot be ruled out.

In the identified part of the site, a package of redeposited loess was observed, which covers the relics of mining shafts. These layers are rich in artifacts. Their analysis showed that they had features typical of the workshop.

The work currently underway is aimed at determining the original location of the workshop. The selected strategy assumes the use of spatial analysis. It is planned to drill a number of survey trenches and analyze the artifacts in terms of density, azimuths of their location and angles of inclination. Based on the information obtained in this way, it is planned to reconstruct the directions and nature of mass movements that caused the transport of archaeological materials. This will make it possible to determine the original location of the flint workshop and the

dynamics of formation of the current relief of the site. The poster will present the project's assumptions and preliminary results.

Beata Bielińska-Majewska (The District Museum in Toruń), Beata Sobko (Museum of Archaeology and Ethnography in Łódź)

Flint materials from Otłoczyn in the collections of the District Museum in Toruń

In the collections of the Department of Archaeology of the District Museum in Toruń there are over 30 flint products that were discovered in Otłoczyn, Alekandrów County, Kuyavian-Pomeranian Voivodeship. This presentation aims to outline the circumstances of the discovery of the flint finds and to determine their approximate chronology. Learning the history and context of obtaining specific objects that constitute a set of artefacts belonging to a defined archaeological site and stored in selected institutions is important when interpreting cultural and chronological phenomena related to the site and its surroundings**.**

Sara Mandera (Institute of Archaeology, Nicolaus Copernicus University), Michael Brandl (Austrian Archaeological Institute, Austrian Academy of Sciences), Magdalena Sudoł-Procyk (Institute of Archaeology, Nicolaus Copernicus University), Christoph A. Hauzenberger (Institute of Earth Sciences - NAWI Graz Geocenter Petrology & Geochemistry, Karl-Franzens-University Graz), Dagmara H. Werra (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Katarzyna Kerneder-Gubała (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Tomasz Boroń (Institute of Archaeology and Ethnology, Polish Academy of Sciences), Maciej T. Krajcarz (Institute of Geological Sciences, Polish Academy of Sciences)

Advanced petrogeochemical methods in identifying **lithic raw material provenance – the case of "chocolate flint", Poland: preliminary results**

The study of the provenance of archaeological rock materials needs an interdisciplinary research approach, combining archaeology with the methodology of other fields of science, such as geology and chemistry. The archaeological material is unique and often available only in small quantities, so the method used for provenance study must be highly sensitive and as least destructive as possible. Chert raw material is difficult to study due to its relatively heterogeneous structure and very low concentrations of trace elements, and there has yet to be an established universal research approach.
In this work, we show the preliminary results of the ongoing multidisciplinary research on "chocolate flint", one of the valued chert raw materials used by prehistoric communities in Central and Eastern Europe. Its outcrops occur in Poland's Holy Cross Mountains (HCM) and the Kraków-Częstochowa Upland's (KCU) northern part. The aim was to distinguish between the "chocolate flint" of KCU and HCM provenance. Our methodology includes petrography (observation in water immersion using stereoscopic microscopy and thin sections investigation using optical and cathodoluminescence microscopy), microfacies analysis, geochemistry applying Laser Ablation ICP-MS and spectroscopic techniques such as FTIR (Fourier Transform Infrared Spectroscopy). Combining these methods can then be used to verify the provenance of artefacts made of this raw material. The obtained preliminary results are valuable due to the insufficient databases on determining the provenance of chert raw materials, and further work is encouraged using this methodological approach.
The study on "chocolate flint" from KCU was funded by the National Science Centre, Poland, grant 2018/30/E/HS3/00567 realised at the Nicolaus Copernicus University (NCU) in Toruń. The petrogeochemical analyses were additionally co-funded by NCU within the programme Excellence Initiative – Research University – Grants4NCUstudents, grant 4101.00000070, 03.01.00003785. Research in the north-eastern margin of the HCM is part of projects carried out at the Institute of Archaeology and Ethnology Polish Academy of Sciences in Warsaw funded by the National Science

Centre, Poland, grants: 2011/03/N/HS3/03973, 2015/17/N/HS3/01279, and 2017/25/B/HS3/01224.

Lithic materials presentation

Tadeusz Wiśniewski (Independent researcher)

Magdalenian materials from sites in Stare Baraki and Klementowice in the Lublin Region

Conference Participants will have the opportunity to study with materials from two Magdalenian sites in the Lublin Region. Individual stages of flint processing will be presented on examples of selected refittings.

Tadeusz Wiśniewski (Independent researcher)

Late Palaeolithic materials from Wólka Gościeradowska in the Lublin Region

Late Paleolithic materials from Wólka Gościeradowska were excavated during the rescue archaeological research conducted in 2023. Preliminary, two settlement phases were distinguished related to the Arch-Backed and Tanged Point Technocomplexes. The inventories attention is drawn to the raw material structure, which consists of several local varieties of siliceous rocks.

Tadeusz Wiśniewski (Independent researcher), Barbara Niezabitowska-Wiśniewska (Maria Curie-Skłodowska University)

Artefacts made of crystalline rocks from Ulów in Middle Roztocze, SE Poland

During several surface surveys end excavations of site No. 17 in Ulów, a large inventory of artefacts made of crystalline rocks was collected. In total, there are 804 elements, among these: 18 tools, 2 cores, 402 flakes and 383 chunks. Among the tools, forms most closely resembling side-scrapers and unifacial knives are predominant. A large series of massive flakes were obtained by means of a direct percussion with a hard, stone hammer.
The entire inventory is very difficult to interpret and at the present stage of research it is not easy to clearly indicate its chronological and cultural affiliation.

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Materiały krzemienne z epoki kamienia z grądów pod Drążdżewem, pow. makowiecki, woj. mazowieckie

W 2017 roku, w drodze badań powierzchniowych w dorzeczu Orzyca, pozyskano duży zbiór materiałów krzemiennych. Bardzo dokładna i szczegółową prospekcja na piszczystyn terenie o dobrej widoczności, pozwoliła na uzyskanie materiału od łusek po rdzenie krzemienne. Pragniemy pokrótce zaprezentować zebrane materiały, wstępnie datowane na okres mezolitu. W zbiorze liczącym kilkaset artefaktów z sześciu stanowisk znajdują się m.in. importy z krzemienia czekoladowego czy świeciechowskiego. Mamy nadzieję, że wspólna dyskusja nad prezentowanym zbiorem pozwoli na szersze poznanie pradziejowego osadnictwa w dorzeczu Orzyca wnosząc wkład w tematykę przełomu mezolitu i neolitu nad Narwią.