

## DISCUSSION

**Tomas Rimkus**

### Conference report

#### ‘Final Palaeolithic and Early Mesolithic of Northern Eurasia: New research and recent discoveries’— A meeting of the UISPP commission *The Final Palaeolithic of Northern Eurasia*

From 26–28 June 2024, the conference of the UISPP commission<sup>1</sup> *The Final Palaeolithic of Northern Eurasia* took place at the University of Copenhagen. The conference was titled ‘Final Palaeolithic and Early Mesolithic of Northern Eurasia: New research and recent discoveries’ and was organised by Mikkel Sørensen and Kristoffer Buck Pedersen. The first two days of the conference consisted of lectures from a wide range of Final Palaeolithic and Mesolithic research fields: lithic and osseous technologies, excavation methods, spatial analysis of sites, past environments and landscape. Researchers working with materials from Belgium, Denmark, Germany, Lithuania, Norway, Poland and Scotland presented their latest research results, new ideas and perspectives<sup>2</sup> (Figs. 1 and 2). A keynote lecture by Tobias Richter was given on the second day of the conference. Abstracts of the presented talks are given below.

#### Sunken pathways: Exploring the lost landscapes of Late (Upper) Palaeolithic reindeer hunters off the coast of Heligoland

Berit Valentin Eriksen (*Museum für Archäologie Schloss Gottorf*)

In the research project “Pioneers of the North” (funded by the German Research Foundation within the SFB1266, 2016–2024) we address the timing and nature of hunter-gatherer colonisation in relation to environmental preconditions in northern Europe during the period ca.

<sup>1</sup> More information on the commission and its activities can be found here: <https://uispp.net/en/commissions/final-palaeolithic-northern-eurasia>

<sup>2</sup> Full programme of the event can be found here: <https://saxoinstitute.ku.dk/calendar/2024/final-palaeolithic-early-mesolithic-of-northern-eurasia/>

\* Corresponding author. E-mail: [tomas.rimkus@ku.lt](mailto:tomas.rimkus@ku.lt)



International Union of Prehistoric and Protohistoric Sciences (UISPP) commission logo.

15,000–9500 BCE. Our geographic area of study includes the terrestrial lowland areas as well as the past landscapes now flooded by the North Atlantic and the Baltic Sea. As the world warmed, glaciers melted, water levels rose, large areas were flooded and familiar landscapes changed or disappeared under the waves. For these human groups, Heligoland must have been of immense importance as a landmark that could be seen from very far away. Moreover, Heligoland had accessible outcrops of unique flints, which were transported over long distances inland as early as the Late (Upper) Palaeolithic (Eriksen et al. 2022). The reconstruction of contemporary palaeolandscape conditions in the area around Heligoland that was once extensively exploited by Late Palaeolithic hunter-gatherer groups is therefore of central importance for our understanding of the timing and nature of hunter-gatherer colonisation in northern Europe. Questions addressed in this paper considered current research pertaining to a submerged area north of Heligoland, as well as perspectives for future research.

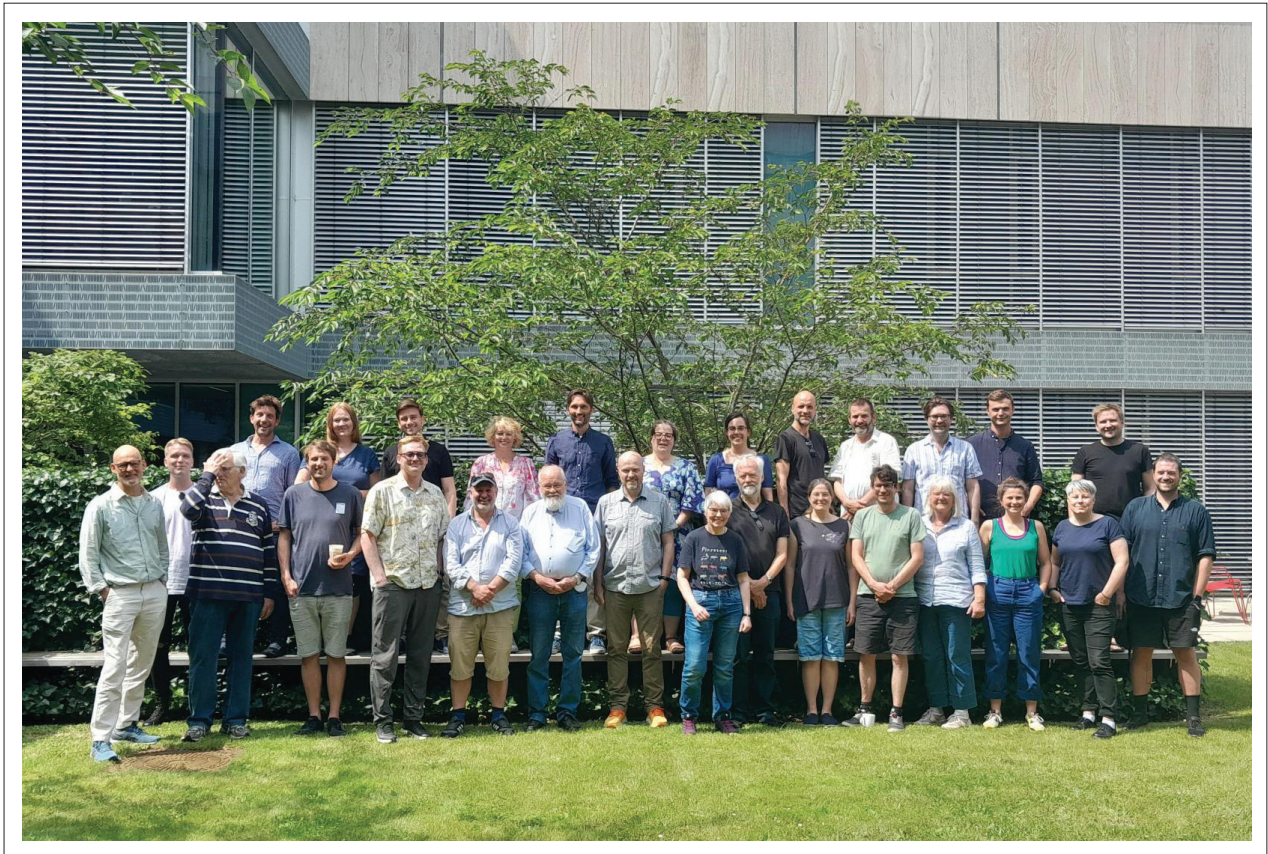


Figure 1. Group photo of the participants of the conference. Photograph by Sørensen.



Figure 2. A moment of discussion on the first day of the conference. Photograph by Sobkowiak-Tabaka.



Where is the oak tree among all the mountain avens? Towards an ecotone reconstruction of Doggerland during the GS-1 with special reference to hypothetical glacial micro-refugia of temperate trees in the North Sea Basin

Sascha Krüger (*National Museum of Denmark*)

Recent studies on sedimentary ancient DNA from cores retrieved west of the Dogger Bank describe possible glacial micro-refugia for temperate trees during the LGM and Late Glacial. These findings strongly contrast with all palaeobotanical records from northern central to northern Europe. Therefore, this talk reviewed the palaeobotanical and partly geological knowledge about and around the North Sea Basin from the last 10 years (and further back) aiming at outlining the likely very diverse flora of Doggerland (Krüger et al. 2017). The temporal focus was set on the GS-1 while attempting to explore whether temperate tree refugia in the North Sea Basin during the Late Glacial are at all possible. In particular, extrapolation of pollen and botanical macrofossil data reveal different ecotones, which may also be important for the understanding of the distribution of Late Glacial techno-complexes. It becomes apparent what a special role the palaeo-river courses and the Late Weichselian North Sea Lake have played in the distribution of different vegetation types. Further, it was demonstrated where the most probable reindeer summer grazing grounds were located and what may have limited these.

Lake Ertenis: A new locality with Final Palaeolithic and Mesolithic organic finds in northwestern Lithuania

Tomas Rimkus (*Institute of Baltic Region History and Archaeology, Klaipėda University*)

Northwestern Lithuania is characterised by a young moraine landscape with an abundance of wetlands. Lake Ertenis, now completely overgrown, is one of them. Since the first half of the 20th century, it has been intensively drained to create new agricultural fields. During this process, bone and antler artefacts were found in various parts of the wetland, which later led to the first archaeological excavations. For many years, both the stray and excavated finds collections were not studied, but in 2021–2024 new research began, focusing on radiocarbon dating and animal species identification of the osseous finds (Rimkus et al. 2019). Current results indicate that the area is only the second site in Lithuania to contain Final Palaeolithic osseous tools. Here, they are made from reindeer and Eurasian elk remains. Moreover, most of the artefacts found

are from the Mesolithic period, which shows the continuation of the hunter-gatherer settlement. Thus, this paper discussed osseous tools, along with the latest studies on them, and presented the first results of the renewed excavation in 2023.

Silver sands and crimson clays: More results from the Lieth Moor area

Sonja B. Grimm (*Leibniz-Zentrum für Archäologie, LEI-ZA-ZBSA*)

In the Lieth Moor area, we find one of the highest concentrations of Late Palaeolithic and Mesolithic sites in Schleswig-Holstein/northern Germany. Our ongoing archaeological, geophysical and palaeoenvironmental research in this area has already revealed surprising insights into the development of this particular area and the wider northern German landscape in general. Yet the question of which factors attracted the Late Palaeolithic and Mesolithic hunter-gatherers to it remains to be investigated. In recent years, we have been able to qualify some hypotheses, such as the long-standing idea of a large lake or the suggestion of salt meadows beside water bodies on the salt diaper (Detjens et al. 2024). We have found no evidence of a Hamburgian presence in this area, nor any indications of Bromme culture material and also proved the idea of an Ahrensburgian site on a potential island to be false. However, collected large blades, so-called giant blades, as well as occasional Ahrensburgian tanged points, support a presence of people at the transition from the Pleistocene to the Holocene in this area. The dated osseous material and famous excavated material clearly indicate a presence of hunter-gatherers in this area during the Lateglacial Interstadial. Looking at the osseous material, its potential use and the spread of archaeological sites in this area compared to the geological background, we have now come up with a new hypothesis of what attracted people to this particular area and how this fits into the wider-ranging pattern of Late Palaeolithic hunter-gatherers.

The Ahrensburgian cave site of Remouchamps: New <sup>14</sup>C-dates and technological analysis of the lithic industry

Hans Vandendriessche (*Ghent University*)

New interdisciplinary research is currently being undertaken on the assemblages from the cave site of Remouchamps. First excavated at the turn of the 20th century, the site of Remouchamps in the Belgian Meuse valley is of major importance for our understanding of the geographical and chronological extension of the Ahrensburgian, as well as the organisation of the Ahrensburgian settlement

system along the Meuse and lower Rhine River valleys. Its lithic industry is characterised by its many obliquely truncated points, alongside small tanged points. Besides that, it shows a clear focus on the production of bladelets rather than blades. The latter are scarce and long blades and *Gross-* or *Riesenklinge* seem to be lacking entirely. The many faunal remains at the site are dominated by reindeer, but are further also comprised of horse, chamois, hare and ptarmigan among others. In addition to these more mundane finds, the site is also known for having yielded a few decorated bone artefacts, perforated tertiary shells from the Paris Basin, human remains and several ochre-stained and ochre-covered lithic artefacts. A series of 30 new radiocarbon dates, carried out essentially on cut-marked bones, range entirely in the final phase of the Younger Dryas and the beginning of the Pre-Boreal, approximately from ca. 12,200/12,000 cal BP to ca. 11,700/11,500 cal BP (Crombé et al. 2024). This is a surprising result given that the older dates were more heterogeneous and suggested an earlier presence at the cave, already in the first half of the Younger Dryas. Secondly, based on the results of an attribute analysis and an ongoing refitting study including the materials from both the 1902 and the 1969–1970 excavations, the role of the site of Remouchamps within the existing Younger Dryas technological traditions was discussed.

#### Final Palaeolithic and Mesolithic (ca. 10,900–7000 BCE) projectile variability in northwest Europe: Changing social contexts for tool production

Inger Marie Berg-Hansen and Hege Damlien (*Museum of Cultural History, University of Oslo*)

Variation in the projectile inventory has long been used for dividing the Stone Age archeological record into separate cultural and temporal units. The Late Palaeolithic and Mesolithic of northern Europe are good examples of periods where regional and local typologies have dominated the understanding of prehistory. Recent critiques, based on new methodological perspectives, have raised doubts as to the validity of such typological approaches since they often fail to account for the internal variation seen in the morphologically defined groups. Moreover, recent large-scale technological studies of lithic blade technologies from northwest Europe contradict the assumption of numerous independent regional groups during the Final Palaeolithic and Mesolithic by demonstrating a shared and uninterrupted tradition of blade-making, indicating technological relatedness within large areas (Berg-Hansen and Damlien 2023). Here, we presented the results from a study of variability in morphological and metrical attributes of the projectile inventory from 53 excavated sites dated from the Final Palaeolithic to the Middle Mesolithic

(10,900–7000 BCE) in Norway, Sweden, Denmark and northwest Germany. We see three important trends in our data. First, the projectile inventory does not fall into meaningful regional or temporal morphological groupings but exhibits variation both within and between groups. Second, the variation in point morphology seems to occur independently of the development in blade production methods in the Final Palaeolithic and Early Mesolithic. At the onset to the Middle Mesolithic, the two developments coincide. More importantly, our finds show that this development does not occur simultaneously in the study area, rather we see varied trajectories of change in the different regions. Third is an increased use of microliths. In this paper we discussed how the two datasets (projectile morphology and blade production methods) combined can offer a new understanding of interaction dynamics and the culture-historical development of the Stone Age of northwest Europe.

#### The sharp edge of northwestern Europe: Lithics perspectives from the PALaE-oScot project

William Mills (*University of Aberdeen*)

The paper focused on the lithics dimension of the PALaE-oScot project, led by Prof. Kate Britton at the University of Aberdeen (PALaEoScot, 2024). The project looks at the earliest occupation of Scotland following the Last Glacial Maximum. Its main objective is to add a paleoenvironmental and direct dating framework to the Pleistocene finds discovered over the last 20 years. This is combined with a re-evaluation of archival lithic collections, with the view that any Palaeolithic material may have been dismissed or misattributed, due to the misconception that Scotland would have been glaciated and inaccessible throughout the Late Glacial (Ballin et al. 2010). Although several potential and even probable Late Glacial techno-complexes have been recognised, there is a significant lack of both dating and environmental contextualisation of human behaviour associated with the lithic assemblages. The project also combines a systematic assessment of strategic landscape positions and sedimentary traps with high potential for a combination of Late Glacial paleoenvironmental data, dating and lithic material.

#### Langfjelldal: An alpine Early Mesolithic single unit reindeer camp

Morten Ramstad and Tor Arne Waraas (*University Museum of Bergen*)

The Langfjelldal site is located in a dramatic high alpine landscape, surrounded by jagged mountain peaks and glaciers in Reinheimen National Park. Langfjelldal is the first

Early Mesolithic high mountain site in Vestland County and is interpreted as the result of a single, short encampment episode. There is no recorded post-depositional disturbances affecting the distribution pattern of lithics and structures. The site location, as well as the find assemblage, indicates a highly specialised camp for reindeer hunting and butchering of animals. Production of points, as well as activities related to tooling and retooling testify to the importance of manufacture and repair of hunting equipment (Ramstad and Linge 2015). All the activity seems to be restricted to a limited area near a tented area and an open-air fireplace. The site also gives a glimpse of high mountain lithic raw material procurement. Rock crystal dominates the assemblage (71%) while the rest — flint (29%) — was originally picked up from glacial shorelines along the coast and transported to the high mountain sites as tools, preforms and prepared cores. At Early Mesolithic sites along the coast, rock crystal only appears in the range of 0%–3% of the total assemblages, probably due both to retooling on high mountain sites and bringing universal exotic raw material back to base camps along the coast. The locality is situated on a small terrace, 730 m.a.s.l, at the northern side of the Langfjell valley. Below the site is a dry creek bed that contains water in times of flooding, which represents the only available water source at the time of habitation. The site location differs from all other excavated Pre-Boreal sites in Norway, which are either located in close proximity to the waterfront on mountain lakes or to old beach shorelines along the coast.

#### Final Palaeolithic Magdalenian site at Kleszczowa 9, Silesian voivodeship (southern Poland): Results of typological, raw material and traseological analyses and further perspectives

Kacper Baranowski and Magdalena Sudoł-Procyk (*Nicolaus Copernicus University*)

The archaeological site at Kleszczowa 9 is one of the few examples of a Final Palaeolithic settlement in Poland. The flint artefacts from Kleszczowa are an example of the remains of a flint workshop where local flint raw material was processed (Sudoł-Procyk et al. 2022). The flint inventory was subjected to technological-typological, raw material and traseological analyses. The technological-typological structure of the inventory confirmed that it is typical of Palaeolithic workshops. Among the semi-raw materials (70% of the whole inventory), typical blades stand out. A large percentage of so-called domestic tools were recorded in addition to these. Furthermore, flint cores from all phases of exploitation, technical forms and extraction tools were also recorded on the site. The entire inventory was made from very good quality flint raw material that was exploited at the site. Such good quality raw material

is rare in the zone of eastern influence of the Magdalenian culture but characteristic of the southern part of Poland — the Krakow-Czestochowa Upland. The question of the flint raw material used not only informs us of the utilitarian preferences of the communities on the site but also enables interregional contacts to be captured. Thus, for example, chocolate flint, outcrops of which are found in the vicinity of Kleszczowa, is recorded at Magdalenian Moravian sites (e.g. Kůlna Cave or Pekarna). Traces of use have been recorded on flint products which are associated with planing and cutting of wood, hiding and meat cutting but also rarer traces in the form of siliceous plant working (e.g. reeds). In addition, organic residues were recorded on the surface of some products, which were analysed by SEM/EDS.

#### Recent developments in the archaeology of the last hunter-gatherers of southwest Asia

Tobias Richter (*Department of Cross-Cultural and Regional Studies, University of Copenhagen*)

Southwest Asia preserves one of the most well-studied sequences of Final Pleistocene to Early Holocene cultural change globally. The period between the end of the Last Glacial Maximum and the earliest Holocene marks a crucial period during which key practices and patterns emerged that would shape and foster the initial steps towards plant cultivation and the emergence of agriculture in this region. Despite the geopolitical vagaries that have plagued the region and affected research, and although many gaps remain, recent work has critically advanced our knowledge and understanding of the patterns and parameters that led to the transition from hunting and gathering to early agriculture in the region (Richter and Darabi 2023). The paper discussed some of the major results and developments in the archaeology of the Epipalaeolithic and Pre-Pottery Neolithic A (between ca. 21,000–10,600 years cal BP) in the region.

#### Survey and excavation of an extensive Final Palaeolithic palaeolandscape at Lommel Molse Nete

Bart Vanmontfort (*Leuven University*)

The development of a 240 ha industrial zone in Lommel north of the Molse Nete valley resulted in a large-scale preventive archaeology campaign from 2009 onwards. In large parts of the area, an augering survey identified the remains of an extensive Late Glacial paleolandscape covered by Younger Dryas dune sands. A large number of lithic artefact scatters have been detected in primary position, and their subsequent excavation is still ongoing.

ing (Vanmontfort et al. 2022). The unique character of the site lies in its magnitude and the pristine preservation conditions. This demanded the development of a tailored methodology, balancing the need for detail in line with the site's research potential and the constraints of developer-funded archaeology. The contribution presented the site, the methods used and the first preliminary results.

### Settlement spatiality reflecting spirituality: Searching for 'high-order' cultural expressions of the Final Palaeolithic communities in northwestern Europe

Jessie Van Cauwer (*Leuven University*)

Throughout Europe, the earliest examples of artistic and ritual behaviour have been assigned to the Late Palaeolithic period, most notably the Magdalenian. Except for some painted and engraved pebbles in the southern European Azilian culture, all these expressions of high-order consciousness seem to have disappeared from the archaeological record during the Epipalaeolithic. In the same vein, Federmesser and Azilian lithic industries are usually described as ad hoc, less structured and generally of a lower complexity, in contrast with Magdalenian and other Late-Palaeolithic industries. While we believe the eco-climatological changes during the Allerød Interstadial might have influenced hunter-gatherer subsistence behaviour in terms of hunting technique, we remain skeptical regarding simple ecological deterministic and functional explanations about the overall schism between Late and Final Palaeolithic ways of life (Van Cauwer and De Bie 2018). We recognise the possibility that behaviour reflecting high-order, ritual consciousness might be less easily archaeologically visible than during the previous period. Nonetheless, we believe that hitherto unacknowledged patterns might be present in several Federmesser sites. We start from the observation that at the Federmesser site of Rekem (Limburg province, Belgium) a well-defined cluster of arched-backed piece production is isolated from the overall encampment. These observations might be interpreted as recurrent in other Federmesser sites and are reasoned to have an — at least partly — ritualistic purpose. Lastly, a more meta-theoretical viewpoint is assumed, in search of possible explanations for the historical research gap regarding the topic of ritual behaviour in Late and Final Palaeolithic societies respectively.

### Blykullebakken: A new Late Glacial site on Bornholm, Denmark

Lasse Sørensen, Finn Ole Nielsen, William Mills and Berit Valentin Eriksen (*The National Museum of Denmark, Bornholms Museum, University of Aberdeen, Museum für Archäologie Schloss Gottorf*)

Blykullebakken is a novel Late Glacial site, which was discovered by chance in 2020 on the Danish island of Bornholm. The site is located on a small sandy hill, where the Læså creek has its outlet. Currently, the site is threatened by coastal erosion, thus exposing worked Late Glacial lithics directly in the sandbank, leading to smaller excavations of Blykullebakken from 2021 to 2023. The results from these preliminary investigations were presented in this paper with a focus on the stratigraphy and OSL and AMS dates of the Late Glacial and Early Holocene layers together with a presentation of the worked lithics from the site, which is characterised by the presence of Zonhoven points and lack of micro-burins. The site is thus of cardinal importance when trying to disentangle the many levels of transitions and continuity observed between the Ahrensburgian and Early Maglemosian techno-complexes in northern Europe.

### Challenging aggregations: Flint curation, wind direction and sequential activities in Palaeolithic open-air camps

Iwona Sobkowiak-Tabaka (*Uniwersytet im. Adama Mickiewicza*)

Spatial analysis in archaeology is familiar with numerous examples of an 'umbrella' of similar archaeological remains, which hide different processes behind the spatial distribution of artefacts, features and sites. Artefact concentrations (artefact clusters) composing Palaeolithic and Mesolithic open-air camps are also evident. These artefact concentrations, reflecting hunter-gatherer intra-site activities, are often treated as functioning synchronously with each other. By drawing upon ethnographic analogies, the oversimplified hypothesis on the synchronicity of clusters (even if short-distance refits are observable) narrows the variability of behavioural patterns in the remote past to the lifeways of modern hunters, gatherers and fishers.

Alternatively to hypothetical synchronisations, the paper summarised our recent quantitative approaches, enabling us to trace the hunter-gatherers' relocation inside an open-air camp. The research procedure integrates the analysis of artefact curation (spatial replacement of blade parts), the spatial distribution of fire (location of hearths) and the lithic assemblage structure (Sobkowiak-Tabaka and Diachenko 2020). A case study based on data from the Lubrza site, located in the western part of Poland, ex-



emphasies the patterns in the smallest-scale movement of people, which may be traced archaeologically.

### Ahrensburgian excavations at Knudshoved Odde: Some new results

Brian Westen and Kristoffer Buck Pedersen (*Museum of Southeast Denmark*)

Since the 1960s, Knudshoved Odde near the southern tip of Zealand has been a Late Palaeolithic hotspot in Denmark. In Late Glacial times, the peninsula was an elongated hill which to the north delimited a large plain below the present-day waters of the Storstrømmen. Initially, it was mainly amateur archaeologists who found and identified sites from the Bromme culture. However, they also managed to identify the first Danish site from the Federmesser culture. Around the turn of the millennium, several professional excavations were carried out on Knudshoved Odde as a collaboration between the local museum and

the University of Copenhagen, with the large Ahrensburgian settlement of Eskebjerg being particularly noteworthy (Pedersen 2012). All this time, the landscape has been farmland. But in 2022, the landowner decided that the area should be rewilded and turned into a nature reserve. In connection with this, a number of archaeological investigations were carried out where watering holes and paths were to be established, and large areas were surveyed in connection with ploughing and planting. This work revealed several new sites, but it was the Ravnebjergene at the far end of Knudshoved that especially attracted attention. In 2022, a small-scale excavation revealed a small, well-preserved site from the Ahrensburg culture. In 2023, we returned to the site and continued the investigation, focusing on detailed observations to describe the complex stratigraphy at the site. In contrast to the previous year, it was mainly artefacts from the Allerød-era Bromme culture that were found. A stone hearth in the centre of a profile was subsequently dated to the Late Bronze Age. The dating of the hearth explains the complicated stratigraphy where soil movement ensured that the Bronze Age surface has been overlaid by soil containing artefacts from the Bromme culture.



Figure 3. Studies of lithic collection in the lithics laboratory at the end of the second day. Photograph by Sobkowiak-Tabaka.

### Bromme Locus Classicus revisited

Mikkel Sørensen, Morten Fischer Mortensen and Kristoffer Buck Pedersen (*University of Copenhagen, The National Museum of Denmark, Museum of Southeast Denmark*)

Nearly 80 years after the initial excavations at Bromme, the first Late Palaeolithic site discovered in Denmark, the Bromme site continues to yield remarkable information. While several other sites from the Bromme culture in Denmark have been excavated since the acknowledgement of the Bromme site and culture in 1944, Bromme stands out as the only site where a settlement horizon was found with an organic layer dating back to the Allerød period (Sørensen et al. 2023). The objective of the excavations, carried out by the University of Copenhagen and Museum Vestsjælland in 2021, was to find and examine the cultural layer and its archaeological potential. The excavations revealed that the cultural layer at the low-lying part of the site, probably a former lakeshore, is covered with dunes of sand from the Younger Dryas and therefore has organic preservation. From the excavations, the Allerød landscape and the former excavations were evaluated. Further, new radiocarbon dating was undertaken that confirms a cultural dating to the late Allerød period.

The second day of the conference ended with the studies of lithic collection from the Danish Stone Age sites and experimental lithic material (Fig. 3).

The last day of the meeting was dedicated to a field trip. Well-known Danish Late Palaeolithic and Early Meso-





Figure 4. Participants in the field trip next to the signpost for Bromme village. Photograph by Eriksen.



Figure 5. Visit to the Stoksbjerg Bro site. Photograph by Rimkus.





Figure 6. Lasse Sørensen (on the left) giving a tour in the Early Mesolithic section of the prehistory exhibition in the National Museum of Denmark. Photograph by Rimkus.

lithic sites were visited: Bromme, Stoksbjerg Bro and Holmegaard Mose (Figs. 4 and 5). A visit to the exhibition in the Holmegaard Værk Museum followed the guided tour in Holmegaard Mose. For the conference delegates who remained in Copenhagen after the official conference programme, Lasse Sørensen gave a guided tour of the prehistory exhibition in the National Museum of Denmark (Fig. 6).

Summing up, the *Final Palaeolithic of Northern Eurasia* commission conference in Copenhagen welcomed a wide range of papers, which provided discussions and new perspectives on the older materials.

## References

- Ballin, T.B., Saville, A., Tipping, R. and Ward, T., 2010. An Upper Palaeolithic flint and chert assemblage from Howburn farm, South Lanarkshire, Scotland: first results. *Oxford Journal of Archaeology*, 29 (4), 323–360. <https://doi.org/10.1111/j.1468-0092.2010.00352.x>
- Berg-Hansen, I.M. and Damlien, H., 2023. Away with the borders! Variation in lithic technological practices in Northern Europe. Final Palaeolithic and Mesolithic (10 900–7000 BCE). In: J. Apel and L. Sundström, eds. *Stones. Current Stone Age research in Northern Europe. Occasional papers in archaeology, OPIA 81*. Uppsala: Uppsala University, pp. 148–165.
- Crombé, Ph., Pironneau, C., Robert, P., Van Der Sloot, P., Boudin, M., De Groote, I., Verheyden, S. and Vandendriessche, H., 2024. Human response to the Younger Dryas along the southern North Sea basin, Northwest Europe. *Scientific Reports*, 14, 18074. <https://doi.org/10.1038/s41598-024-68686-z>
- Detjens, S., Grimm, S.B., Oflaz, A., Wilken, D., Wunderlich, T., Rabbel, W. and Eriksen, B.V., 2024. We came for the lake – Late Pleistocene landscape reconstruction in Lieth Moor, district Pinneberg, Germany. *Geosciences*, 14 (2), 30. <https://doi.org/10.3390/geosciences14020030>
- Eriksen, B.V., Detjens, S. and Rabbel, W., 2022. Tracking Late Palaeolithic reindeer hunters off the coast of Heligoland. *ZBSA Jahresbericht 2021*, 81–83.
- Krüger, S., Dörfler, W., Bennike, O. and Wolters, S., 2017. Life in Doggerland – palynological investigations of the environment of prehistoric hunter-gatherer societies in the North Sea Basin. *E&G Quaternary Science Journal*, 66 (1), 3–13. <https://doi.org/10.3285/eg.66.1.01>
- Pedersen, K.B., 2012. Two sites to every story – Late Upper Palaeolithic site variability in Denmark. In: M.J.L.Th. Niekus, R.N.E. Barton, M. Street and Th. Terberger, eds. *A mind set on flint. Studies in honour of Dick Stapert*. Groningen: Groningen University Library, pp. 281–293.
- Ramstad, M. and Linge, T.E., 2015. Reinsjakt i pionertida. Ein nyoppdaga steinalderbuplass i Langfjelldalen. *Årbok for Norddal 2015*, 6–18.
- Richter, T. and Darabi, H., eds., 2023. *The Epipalaeolithic and Neolithic in the eastern Fertile Crescent: revisiting the hilly flanks*. London: Routledge. <https://doi.org/10.4324/9781003335504>
- Rimkus, T., Butrimas, A., Iršėnas, M. and Meadows, J., 2019. The decorated spindle-shaped bone dagger from Šarnelė: the earliest example of hunter-gatherer mobile art in Lithuania. *Archaeologia Baltica*, 26, 50–63. <https://doi.org/10.15181/ab.v26i0.2022>
- Sobkowiak-Tabaka, I. and Diachenko, A., 2020. Approaching daily life at the Late Palaeolithic camps: the case of Lubrza 10, western Poland. *Praehistorische Zeitschrift*, 95 (2), 311–333. <https://doi.org/10.1515/pz-2020-0031>
- Sørensen, M., Pedersen, K.B., Mortensen, M.F., Henriksen, P.S., Hartmann, N. and Sørensen, L., 2023. Nye undersøgelser af Bromme locus classicus. *Geffon*, 8, 8–30.
- Sudoł-Procyk, M., Malak, M., Binnebesel, H. and Krajcarz, M.T., 2022. Striped flint in archaeological materials around the outcrops of the Kraków-Częstochowa striped flint variety. *Archaeologia Polona*, 60, 163–185. <http://dx.doi.org/10.23858/APa60.2022.3099>
- Van Cauter, J. and De Bie, M., 2018. Settlement spatiality reflecting spirituality: searching for high-order cultural expressions of Final Palaeolithic communities in northwestern Europe. *Expression*, 21, 49–55.
- Vanmontfort, B., Van Der Waa, M., Verbeeck, K., De Boeck, Sh., Van Baelen, A., Willems, M. and Geerts, F., 2022. Landscape development and hunter-gatherer activity in Lommel Molsse Nete (BE) during the Late Glacial and early Holocene. First results of an extensive survey. *Notae Praehistoricae*, 42, 133–144.