



# Book of abstracts

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**XVIII-1. Reindeer or fish? Late  
Glacial subsistence strategies in the  
light of new information.**

# Late Palaeolithic Pioneers of the North. A case study from Late Glacial Denmark

Berit Valentin Eriksen \* <sup>1</sup>

<sup>1</sup> Centre for Baltic and Scandinavian Archaeology (ZBSA) – Schloss Gottorf, D-24837 Schleswig, Germany, Germany

This paper will address the question of how Late Glacial hunter-gatherer groups moved into frontier areas in Northwest Europe and coped with more or less extreme environmental conditions. Due to the proximity of the Fennoscandian glacier and the damming and subsequent deluge of the Baltic Ice Lake, large scale climatic and environmental changes made themselves particularly hard felt among the pioneer settlers of the region. The present paper will review recent finds from Late Glacial Denmark contributing to our knowledge of the timing and nature of the colonization process. The thematic focus will highlight past subsistence-economic and socio-cultural responses to climatic changes, as well as the interaction of humans and the natural environment on a spatiotemporal scale.

**Keywords:** Late Palaeolithic Denmark, Brommian, Ahrensburgian, reindeer hunters

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\*Speaker

# Was Neanderthal a fisherman ?

Emilie Guillaud <sup>\*† 1,2</sup>, Philippe Béarez <sup>1</sup>, Marie-Hélène Moncel <sup>3</sup>

<sup>1</sup> Archéozoologie, Archéobotanique : sociétés, pratiques et environnements – CNRS : UMR7209 –  
Muséum national d’Histoire naturelle case postale 56 55 rue Buffon 75005 Paris, France

<sup>2</sup> Institut de Paléontologie Humaine – CNRS : UMR7194 – 1, rue René Panhard 75013 Paris, France

<sup>3</sup> Institut de Paléontologie Humaine – CNRS : UMR7194 – 1, rue René Panhard 75013 Paris, France

Whether or not Neanderthals were fishermen still remains an enigma. It is now admitted that the range of exploited natural resources by Neanderthals was large including small prey. Fish, particularly freshwater fish, could have been a diet solution in times of shortage or part of the common behavior of these humans.

Little research into this subject has been carried out until now. Europe is a privileged context for the study of the question of fishing during the Palaeolithic. Our corpus is made of 11 sites located in three countries (Spain, France, Belgium). We are now able to present a large picture of the data available in these geographical area. The first step has been to establish an exhaustive list of potential accumulators, including humans, carnivores and birds that frequent caves or rock-shelters. In order to evaluate the potential role of each predator, we applied several methods: quantification, weight and size estimation, spatial distribution, taphonomical analyses (including element representation, element fragmentation and bone surface modification) and season of capture. This methodological framework was aimed to develop a methodology that could help to estimate the part of freshwater resources in human diet during the palaeolithic period.

In most cases, our results are for the moment insufficient to provide clear and precise evidence because of three major disadvantages: (1) methods applied during excavations have not always been adequate to recover fish remains; (2) taphonomical impact could be a major source of bias; and (3) fish have apparently not been exploited in large quantities.

Despite our synthetic approach, the exploitation of aquatic resources by Neanderthals during the Palaeolithic in Europe remains still controversial.

**Keywords:** Neanderthal, fish bones, accumulators, diet

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\*Speaker

†Corresponding author: emilie.guillaud@mnhn.fr

# Subsistence strategies of the population of the forest zone of Eastern Europe and Urals at the brake from Pleistocene to Holocene

Mikhail Zhilin \* <sup>1</sup>, Svetlana Savchenko <sup>2</sup>

<sup>1</sup> Institute of Archaeology of Russian Academy of Sciences (IA RAS) – Dm. Ulyanov str., 19, Moscow, Russia

<sup>2</sup> Sverdlovsk Regional Museum (SOKM) – Malysheva street, 46, Yekaterinburg, Russia

Transition from Pleistocene to Holocene in Northern Eurasia was marked by rapid and substantial environmental changes. Only few sites with faunal remains are dated to the Younger Dryas. Forest-tundra or park tundra landscapes dominated at that time over vast territories. The bottom layer of Zolotoruchje 1 on the Upper Volga produced bones of reindeer and bison, accompanied by flint industry with microblades obtained by pressure some of which were used as projectile inserts. Sites Syun I and II in the Southern Urals produced flint industry with microblades accompanied by bone barbed points, a slotted knife and an arrowhead with microblades-inserts. No traces of fishing or gathering were documented for these sites.

Two sites with good preservation of organic materials are dated to the start of the Preboreal period which was marked by gradual spread of forest vegetation first in river valleys and lake depressions. Bottom layer of Stanovoye 4 site in the Volga-Oka interfluve produced bones of typical forest mammals where elk and beaver dominate, desman also numerous, hare, brown bear, badger, pine marten, otter are scarce while domestic dog makes an impressive series. No bones of reindeer or bison were found. Bones of waterfowl: grebes, swan, ducks, teals, coot, goldeneye; and fish: roach, asp, burbot make small series. Bone slotted arrowheads, some with preserved microblades-inserts are accompanied by a flint tanged arrowhead.

Bottom layer of Beregovaya II site in the Trans-Urals also yielded bones of typical forest mammals where elk and beaver dominate, red deer, brown bear, pine marten are scarce. No bones of reindeer were found. Small number of bird bones includes grebes, teals, diving duck, swan, loon, ruff, black grouse. Fish bones make a series, perch is the most numerous while pike, roach and crucian are met in a small number. Bone harpoon heads, a wooden barbed point, a slotted bone arrowhead and an intact fishing hook were used for hunting and fishing.

Described materials illustrate the change in subsistence strategies of population of Eastern Europe and Urals from hunter-gatherers of open landscapes to hunter-fisher-gatherers of the forest zone during transition from Pleistocene to Holocene. The latter strategy was well developed already by the middle of the Preboreal period from the Baltic to the Trans-Urals and played leading role in economy of population of this vast territory till introduction of farming.

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\*Speaker

**Keywords:** Subsistence strategies, forest zone, Eastern Europe, Urals, Pleistocene, Holocene



# The dynamic and diversity of Federmesser subsistence strategy in North European Plain

Iwona Sobkowiak-Tabaka \* <sup>1</sup>

<sup>1</sup> Institute of Archaeology and Ethnology, Polish Academy of Sciences – 46, Rubież, 61-612 Poznań, Poland

This paper aims to recognize ways of life of Federmesser groups at the North European Plain. The research approach based on behavioural ecology theory, studying the actions of people in a specific ecological context and to recognise the relations between human behaviour and the material culture regardless of time and space. All considerations are placement in five, highly precise chronological ranges covering the timespan between the second half of GI-1e and beginning of the Younger Dryas (12,240-10, 631 BC), outlined on the basis of calibration of a set of radiocarbon dates from a single site.

Despite, faunal remains are very scanty, resulting from their state of preservation, the analysis of their distribution made it possible to group sites into three basic categories, suggesting certain food preferences among the Federmesser hunter-gatherers. The groups are diverse in terms of animal species composition. These groups are varied in terms of animal species composition, with a prevailing share of the remains of large and medium-sized ungulates; the bones of small mammals prevail, including beavers and suggest the consumption of land mammals, as well as fish.

It is highly likely that the observed trends result also from significant chronological differences between the sites and, consequently, the occupation of different ecological niches, being a derivative of a very unstable climate during the Late Glacial.

Results of carried out research mirroring the statement that providing one, universal diet model not only of Federmesser hunter-gatherers but overall is impossible due to its large variety depending of ecological conditions and climate.

**Keywords:** Late Glacial, Federmesser, hunter, gatherer, subsistence strategies

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\*Speaker

# Late Palaeolithic and Early Mesolithic subsistence strategies in the Netherlands. What is the current state of knowledge?

Eelco Rensink <sup>\*†</sup> <sup>1</sup>, Roel Lauwerier <sup>1</sup>

<sup>1</sup> Cultural Heritage Agency of the Netherlands – Netherlands

During the Late Glacial and the Early Holocene, the Netherlands must have been an attractive area for hunting and fishing in view of, for instance, the abundance and easy accessibility of open water locations (main rivers, streams, lakes), though chronological and regional variations of course have existed in the nature and abundance of exploited food resources. However, due to taphonomic processes and bad preservation conditions, information on subsistence strategies of Late Pleniglacial (Magdalenian), Late Glacial (*Federmesser Gruppen*, Ahrensburgian) and early Holocene hunter-gatherers in most of the cases is not based on faunal remains, but derives from other types of evidence (like site-location) and faunal data from (approximately) *contemporaneous archaeological sites* outside the Netherlands.

In the paper data on subsistence strategies from the Netherlands is presented and discussed looking at 1) faunal remains found in Late Palaeolithic and Early Mesolithic archaeological context (for instance Doetinchem, Zutphen), 2) information on site location (Well-Aijen), and 3) results from micro-wear analysis (Eyserheide, Oldeholtwolde).

**Keywords:** subsistence strategies Late Palaeolithic Early Mesolithic The Netherlands

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\*Speaker

†Corresponding author: e.rensink@cultureelerfgoed.nl

# Early Mesolithic Hunting Strategies and Seasonal Human Behaviour in Northern German lowlands

Ulrich Schmölcke \* <sup>1</sup>

<sup>1</sup> Centre for Baltic and Scandinavian Archaeology (ZBSA) – Schlossinsel 1 24837 Schleswig, Germany

In the waste zones of Friesack 4, Brandenburg, Germany, thanks to excellent preservation conditions more than 17,000 mammal remains has been excavated by B. Gramsch and his team between 1978 and 1989. Thousands of bones from birds, fishes and other vertebrates can be added. They spread from preboreal layers to mid-boreal horizons (complex III). At all, about 40 % of the mammal remains could be determine to species level. Altogether the common species spectrum characteristic for the first half of the Central European Holocene is recorded in Friesack 4. The diversity of the faunal spectrum used by the human hunters did no differ even if the frequency of the single species and the number of identified species change. Hunting occurred especially in May and June and was in all economically relevant species dedicated to females and subadult animals. The proportions of the body parts of the different game species shows concordantly that the animals were slaughtered elsewhere. Friesack 4 was only the place of consumption.

**Keywords:** Preboreal, Boreal, early Mesolithic, hunting strategies, archaeozoology

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\*Speaker

# Reindeer or Fish? A critical review

Thomas Terberger \* <sup>1</sup>, Jacek Kabacinski <sup>2</sup>

<sup>1</sup> State Agency for Heritage Service of Lower Saxony – Germany

<sup>2</sup> Polish Academy of Science – Poland

Reindeers form part of the narrative of Late Glacial societies of the North European plain. This is certainly due to the evidence from the Late Glacial sites of the Ahrensburg tunnel valley with an overwhelming number of reindeer remains and this was confirmed by new finds from the Slotseng site. However, the role of aquatic resources has been discussed for the Upper Palaeolithic in the past for example by Cleyet-Merle many years ago. The last years provided first <sup>13</sup>C/<sup>15</sup>N-isotope evidence from human remains, which probably date to the early Preboreal or late Younger Dryas. They indicate the consumption of aquatic food resources and this challenges the traditional perspective. The paper will discuss these results on the background of further isotope evidence available from other (coastal) areas. Finally we will focus on more general evidence for the lifestyle at the onset of the Holocene, when hunter-fisher-gatherers colonized northern Europe.

**Keywords:** Late Glacial, diet, subsistence strategy, isotopes

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\*Speaker

# Ahrensburg Tunnelvalley and beyond – Revisiting Final Palaeolithic subsistence strategies

Mara-Julia Weber \* <sup>1,2</sup>, Markus Wild <sup>1,2</sup>, Ulrich Schmölcke <sup>1,3</sup>, Sonja B. Grimm <sup>1,3</sup>

<sup>1</sup> Centre for Baltic and Scandinavian Archaeology (ZBSA) – Stiftung Schleswig-Holsteinische Landesmuseen Schloss Gottorf, 24837 Schleswig, Germany

<sup>2</sup> Archéologie et Sciences de l'Antiquité (UMR 7041) – CNRS, Paris 1 Panthéon-Sorbonne, Université Paris Nanterre, Ministère de la Culture – Maison René-Ginouvès Archéologie et Ethnologie 21 Allée de l'Université F-92023 Nanterre Cedex, France

<sup>3</sup> Scales of Transformation - Human-Environmental Interaction in Prehistoric and Archaic Societies (CRC 1266) – Kiel University CRC 1266 - Scales of Transformation Leibnizstrasse 3 24118 Kiel, Germany

The Ahrensburg Tunnelvalley near Hamburg has been one of the major find regions to study Final Palaeolithic subsistence strategies since the first excavations and subsequent publications in the 1930s. Famous sites such as Meiendorf, Stellmoor, Poggenwisch, or Borneck yielded numerous faunal remains that formed a picture, in particular, about Hamburgian and Ahrensburgian subsistence strategies. These assemblages were clearly dominated by reindeer material suggesting highly specialised reindeer hunter communities. During the long research history, paradigms of Palaeolithic research changed, for example, the various biases, such as the seasonality or the specific preservation conditions in water logged sediments, are now considered more important factors in forming the collections.

During the last decades, new analytical methods as well as new assemblages from the region north of Hamburg made it possible to challenge the picture of specialised reindeer hunters. In the Ahrensburg Tunnelvalley, the search for Rust's Stellmoor excavation by Ingo Clausen as well as the project of enlarging the train tracks through this area stimulated further work and yielded new material. Furthermore, areas around the Lieth Moor or the Itzstedt Lake as well as single finds supplemented our view on the Final Palaeolithic subsistence strategies.

Different isotopic and tooth micro- and meso-wear analyses have supplemented the traditional faunal analyses. Revisions of classic inventories with a new perspective, re-dating of these as well as new assemblages, and traditional presentations of new material further contribute to refine our picture of these past societies. Some studies also investigated less prominent collections such as the Federmesser-Gruppen and Mesolithic finds.

In this presentation, we combine the classic views with the new results to present a more holistic picture of the human use of this important find region and the current state of the art of the Hamburgian and Ahrensburgian subsistence strategies in northern Germany.

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\*Speaker

**Keywords:** Northern Germany, Final Palaeolithic, Ahrensburg Tunnelvalley, specialised reindeer hunters

# Geomorphological investigations of arch-backed point site-catchments in the German low mountain range

Florian Sauer <sup>\*† 1</sup>, Felix Riede <sup>1</sup>, Thorsten Uthmeier <sup>2</sup>

<sup>1</sup> School of Culture and Society (CAS) – Aarhus University, Moesgård Allé 20, 8270 Højbjerg, Denmark

<sup>2</sup> Institute for Prehistory – Friedrich-Alexander-University Erlangen-Nürnberg, Kochstr. 4, 91054 Erlangen, Germany

Regarding the Late Palaeolithic in Central Europe, the better part of the record is typically represented by scatters of surface finds accumulated by amateur archaeologists. Excavated and well-documented locations providing information on the exploitation of biotic or abiotic resources are the exception. Therefore, landscape archaeological research is often limited by these restrictions that per default confine analysis to only a fraction of the entire dataset. In the DFG-supported project "GIS-based reconstructions of Late Palaeolithic Land Use Patterns in the North-eastern Bavarian Low Mountain Range" at the Institute for Prehistory at Friedrich-Alexander-University Erlangen-Nürnberg, physiographic plant geography (PPG) and geo-spatial modelling was employed to estimate biological diversity and composition. This allows for the evaluation of geomorphology-driven abiotic gradients determining plant growth. This way, novel insights in bio-economical opportunities of site-catchments can be gained in situations where traditional proxies are lacking. In this talk, the results of this DFG project on resource exploitation in Northern Bavaria will be compared to an extended study area encompassing most of the Lower Mountain Range. In particular, the focus here rests on sites in the Federal State of Hesse which are central to the project "Apocalypse Then? The Laacher See volcanic eruption, Deep Environmental History and Europe's Geo-cultural Heritage", hosted by the Laboratory for Past Disaster Science (LAPADIS) at the University of Aarhus. While it was possible to show the general preference of wetland-conditions for sites in the landscape of northern Bavaria, this presentation's goal is to provide a supra-regional comparison of Late Palaeolithic site clusters. Therefore, different regions containing arch-backed points (ABP) will be evaluated with regard to differences and similarities of the bio-economical opportunities in the site-catchments. This is part of a gradual expansion of the study area investigated by employing PPG-based models with the objective of providing a comprehensive and large-scale map of Late Glacial resource variability and composition, and to investigate to what degree this has structured contemporaneous settlement patterns.

**Keywords:** Late Palaeolithic, Landscape Archaeology, Biodiversity modelling, Federmesser, Biodiversity

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\*Speaker

†Corresponding author: [florian.sauer@cas.au.dk](mailto:florian.sauer@cas.au.dk)

# Early Late Glacial subsistence strategies in the Danish region – reindeer and ?

Morten Fischer Mortensen \* <sup>1</sup>, Kristoffer Pedersen \* † <sup>2</sup>, Peter-Steen Henriksen ‡ <sup>1</sup>

<sup>1</sup> The National museum of Denmark – Ny Vestergade 10 1471 Copenhagen, Denmark

<sup>2</sup> Museum Sydøstdanmark – Algade 97 DK 4760 Vordingborg, Denmark

Worked reindeer antlers and bones found in a small kettle hole close to Slotseng in southern Jutland represent the oldest secure trace of humans in Denmark. This, together with a number of other worked antler finds, could suggest that hunting was concentrated on reindeer in the early late Glacial period. Do these finds represent an overall subsistence economy or do they represent the short seasonal hunting of reindeer? Zoological studies show that both terrestrial and marine animals were available allowing a more varied hunting strategy and archaeobotanical studies similarly show the presence of a number of plants which could have supplemented the diet.

**Keywords:** Late palaeolithic, reindeer, diet, Slotseng, Denmark

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\*Speaker

†Corresponding author: kbp@museerne.dk

‡Corresponding author: Peter.steen.henriksen@natmus.dk



# Reindeer and fish as raw materials – an ethnoarchaeology of Evenk glue technology (east Siberia, Russian Federation)

Auréade Henry \* <sup>1</sup>, Maxime Rageot <sup>2</sup>, Elina Kurovskaya <sup>3</sup>, Veronika Simonova <sup>4</sup>, Sylvie Beyries <sup>1</sup>

<sup>1</sup> Culture et Environnements, Préhistoire, Antiquité, Moyen-Age (CEPAM) – Université Côte d’Azur, Centre National de la Recherche Scientifique : UMR7264 – Université Nice Sophia Antipolis Campus Saint-Jean-d’Angély - SJA3 24, avenue des Diables Bleus 06357 Nice Cedex 4, France

<sup>2</sup> Eberhard Karls Universität Tübingen – Geschwister-Scholl-Platz 72074 Tübingen, Germany

<sup>3</sup> École des hautes études en sciences sociales (EHESS) – École des Hautes Études en Sciences Sociales – 54, boulevard Raspail 75006 Paris, France

<sup>4</sup> European University St-Petersburg – Russia

Today, many traditional, more or less mobile groups still practice a hunting and fishing economy in cold, boreal environments comparable to those of the Late Pleistocene. Among the Evenks, a Siberian people of the tunguso-mandshu language branch, reindeer breeding and hunting are still at the heart of the economy of several groups, while fishing is more or less intensively practiced. Generally, the exploitation of major food resources such as reindeer or elk is "total", i.e., not a single body part goes to waste since non-edible products (e.g., bones, nails, hides) are used for the manufacture of a number of items. The aim of this presentation is to initiate a reflection on the use of fish and ungulate proteins for adhesive-making in Prehistory and the archaeological visibility of this practice on the basis of ethnoarchaeological observations and organic chemistry samples made in 2016-17 among Evenks of the North-Baikal area and Amur Region (Russian Federation).

**Keywords:** Ethnoarchaeology, Late Pleistocene, adhesive materials, fish, ungulates

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\*Speaker

# ”Northern icescapes - barrier or bridge? On sea ice, marine foraging and the colonization of the Scandinavian seascapes”

Hein B. Bjerck \* <sup>1</sup>

<sup>1</sup> Norwegian University of Science and Technology [Trondheim] (NTNU) – NO-7491 Trondheim, Norway

The paper explores the role of the Northern Sea-Ice and its potential for subsistence strategies for the humans that inhabited the northern part of the continental plains in the Pleistocene/Holocene transition. The North Sea sea-ice lingered for a large part of the year (late winter-spring) – a prosperous habitat where marine resources could be accessed without a fully developed marine technology (boats). Naturally, archaeological evidence from human sea-ice activities is expected to be next to non-existing – but this does not necessarily mean that Late Pleistocene sea-ice hunting never happened. The paper explores this possibility, and its potential consequences for the development of northern marine foraging and the colonization of Scandinavian seascapes.

**Keywords:** Late Pleistocene, Sea, Ice, Marine foraging strategies

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\*Speaker

## **XVIII-2. Final Palaeolithic in Eastern Baltic.**

# Lyngby type artefacts before Last Glacial maximum in Lithuania

Algirdas Girininkas <sup>1</sup>, Tomas Rimkus \* <sup>1</sup>

<sup>1</sup> Klaipeda University – Lithuania

The first Lyngby type tool made from reindeer antler in Lithuania was found in 2014, near Nemunėlis and Apaščia Rivers confluence in Parupė village, in northernmost location of Lithuania. This artefact was dated to 11 145 cal. BC. In the same year during gravel extraction in western Lithuania, in the Šnaukštai village, the second tool of same type was found. The third one and the last one was found also in western Lithuania, in Kalnėnai village, during gravel extraction near Nemunas River. According to radiocarbon dating, latter two artefacts are very early and dates to 43 000 cal. BC and 28 000 cal. BC. The main aim of this paper is to analyze distribution, typology and chronology of Lyngby type reindeer antler tools found in northern Europe and eastern Baltic regions. On the basis of the newest radiocarbon data we conclude that these type of tools were in use after Late Glacial maximum and before it. Latest research results shows that two Lyngby artefacts from Lithuania currently are the only ones in Lithuania and northern Europe found man-made tools used until Last Glacial maximum. As far as radiocarbon dating shows these tools were probably in use in Neanderthal and later Homo sapiens existence times. A recent examination of Lyngby type antler tools allows scientists to reconsider not only Lithuania, but also whole eastern Baltic region occupation in the Late Palaeolithic.

**Keywords:** Reindeer, Lyngby tools, Late Palaeolithic, Radiocarbon dating, Lithuania

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\*Speaker

# Decorated Late Palaeolithic spindle shaped dagger from Šarnelė, western Lithuania: archaeological and use-wear analysis

Adomas Butrimas <sup>1</sup>, Tomas Rimkus <sup>\* 2</sup>, Marius Iršėnas <sup>1</sup>, John Meadows <sup>3</sup>

<sup>1</sup> Vilnius academy of arts – Lithuania

<sup>2</sup> Klaipėda University – Lithuania

<sup>3</sup> Centre for Baltic and Scandinavian archaeology (ZBSA) – Germany

Šarnelė settlement is situated on the shore of now drained Ertenis Lake, and on the left bank of here now flowing river Varduva. First Stone Age bone antler chance finds from Šarnelė got to the museum in 1940, when school teacher Brunza took them to Telšiai. In 1965 this collection was supplemented by the ethnographer K. Bružas. Later, during the Ertenis Lake and Varduva river reclamation works, antler and bone findings collection was supplemented one more time. Only in 1973 this settlement was excavated by the archaeologist for the first time. Later, in 1981 and 1982 settlement was excavated again. During two excavations seasons artefacts characteristic to the Neolithic were found: pottery, flint tools, amber, bone and antler tools. So far it was accepted that this site should be regarded as the Late Neolithic monument. This conclusion was supported by pottery, and bone and antler artefacts technological features. In 2016 detail attention was given to the chance antler and bone findings from Šarnelė, which got to the Žemaičiai „Alka” museum in the middle of 20th century. After radiocarbon dating of ornamented bone dagger it was clear that this artefact should be dated to the end of Late Palaeolithic – 10 500 cal BC. Currently it is one of the earliest dates of this kind of tools in the eastern Baltic and Samogitian highland. The dagger is made from splitted tubular bone, its spindle is ornamented with crossing lines, which forms small triangles. This geometric ornament is characteristic to the Late Palaeolithic. Use-wear analysis of this tool shows that it was used quite intensive. At present there are no exact analogies found of this kind of artefact in the eastern Baltic. Radiocarbon dating enables us to think that first settlers could have dwelled here in the Younger Dryas period. This demonstrates that climate conditions and environment was favourable for settling by the Ertenis Lake and in Samogitian highland at the end of Late Palaeolithic.

**Keywords:** Bone tools, Late Palaeolithic, Use wear analysis, radiocarbon dating, western Lithuania

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\*Speaker

# Brommean and Ahrensburgian assemblages in Lithuania

Egidijus Satavicius \* <sup>1</sup>

<sup>1</sup> Department of Archaeology, Faculty of History, Vilnius University – Department of Archaeology, Faculty of History, Universiteto g. 7, Vilnius, LT-01513, Lithuania

Till now there are identified more than 30 Brommean sites and about 40 Ahrensburgian sites in Lithuania. The most of them are located in the Southern part of the country; especially close to the banks of old lateral glaciofluvial valley Vilnius-Warsaw- Berlin and its tributaries. The majority of the sites (surface collections) were discovered in the mid of 20 th century, when the landscapes of the South Lithuania were deeply deforested and effected by wind erosion. Approximately one third of all Brommean sites were more or less archaeologically excavated (by E. Šatavičius, T. Ostrauskas) in later years. The assemblages of Brommean and Ahrensburgian complexes indicate clear relations with corresponding complexes in Poland, Germany and Denmark, but also show some local features. For tools production was widely used local erratic flint raw material from the Southern Lithuania and biggest rivers banks. Especially interesting there are flint mine and workshops sites found at Rudnia-Titnas, Ežerynas, Margionys and Būda-Dumblis with abundant Brommean assemblages. According to typology, geomorphology, stratigraphy as well patinization of flint artefacts, the Brommean complexes are dated to the second half of Allerød interstadial, only several sites indicate early signs related to Havelte or maybe Federmesser tradition. Other complexes with mixed Brommean and Ahrensburgian tool kits and technology features clearly demonstrate the latter's rise from Bromme tradition. The Ahrensburgian sites are mostly dated to Younger Dryas-very beginning of Preboreal. But till now there are no clear data about presence of these sites at the end of aforementioned period. It is noted that the early complexes of Ahrensburgian are close connected with the emergence of Swiderian culture.

**Keywords:** Final Palaeolithic, flint assemblages, Brommean and Ahrensburgian sites, flint mine and workshops, East Baltic

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\*Speaker

# Eight new Late Pleistocene-Early Holocene AMS dates from South-Eastern Baltic

Livija Ivanovaite <sup>\*†</sup> <sup>1</sup>, Bente Philippsen <sup>\*</sup>

<sup>2</sup>, Kirill Makhotka <sup>3</sup>, Felix Riede <sup>1</sup>

<sup>1</sup> Department of Archaeology and Heritage Studies, Aarhus University – Moesgård Allé 20, 8270 Højbjerg, Denmark

<sup>2</sup> Aarhus AMS Centre, Department of Physics and Astronomy, Aarhus University – Ny Munkegade 120, building 1522, 8000 Aarhus C, Denmark

<sup>3</sup> The Kaliningrad Regional Museum of History and Art – Klinicheskaya Str. 21, Kaliningrad 236016, Russia

Only a limited number of radiometric dates for the Final Palaeolithic and the first half of the Mesolithic are available from the south-eastern Baltic. This paper presents eight new Late Pleistocene/Early Holocene AMS dates obtained by dating osseous artefacts housed at the Kaliningrad Regional Museum of History and Art: One piece of worked reindeer (*Rangifer tarandus*) antler, three axes of the (problematically named) ‘Lyngby’ type, one bone point, one uniserial harpoon, one so-called ”bâton percé” antler tool, and one slotted bone point were sampled. Two of the specimens were further subjected to subsequent protein-based species analysis for taxonomic identification. All dating attempts were successful and have provided five Late Pleistocene and three Early Holocene dates, including the hitherto earliest date for human occupation in the Eastern Baltic, a surprisingly early date for a bone point, but also dates that strongly contradict expected ages based on the traditional typological assessment. In sum, these new dates increase the existing radiometrically dated artefact database significantly and stimulate new ways of viewing the Final Palaeolithic and Early Mesolithic chronology in the region.

**Keywords:** New AMS dates, South, Eastern Baltic, Late Pleistocene, Early Holocene, osseous artefacts

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\*Speaker

†Corresponding author: livija.ivanovaite@gmail.com

# Salaspils Laukskola – the northern fringe of the Swiderian technological tradition

Inger Berg-Hansen \* <sup>1</sup>, Ilga Zagorska <sup>2</sup>

<sup>1</sup> Museum of Cultural History, University of Oslo (UiO) – P.O 1072 Blindern 0316 Oslo, Norway

<sup>2</sup> Institute of Latvian History, University of Latvia – Kalpaka bulv. 4, LV 1050, Riga, Latvia

The earliest settlement of Latvia occurred at the very end of the Late Glacial, after the retreat of the ice sheet. Reindeer and their hunters entered the country from the south, using the valleys of the major rivers. The evidences of this earliest habitation are stray finds of reindeer bones and antlers, bone and antler artefacts – Lyngby axe and harpoons of archaic appearance, some of them dated by radiocarbon analyses, and flints. The flint stray finds are most numerous. Only one excavated settlement site with a rich flint inventory, where flints had been discovered in six concentrations, is known - Salaspils Laukskola.

This Younger Dryas site, as well as several smaller finds from Latvia, represents some of the most northerly sites with projectile points of Swidry type (Zagorska, 1996, 1999, 2012). Together with the exploitation of chocolate flint at Laukskola (Sulgostowska, 1997) this is seen as indications of an association with the Swidry finds in the south, e.g. Poland.

A recent technological analysis of the blade production concept used in the site brings further arguments to the discussion, demonstrating great similarities with the Swidry blade technology as described by several authors (Dziewanowski, 2006, Galiński og Sulgostowska, 2013, Grużdź, in press, Migal, 2007, Sulgostowska 1999).

The paper will present results from the technological analysis, and on this basis discuss the relationship between the Latvian finds and the Swidry area further south.

**Keywords:** Lithic technology, technological tradition, Swidry, Eastern Baltic, Latvia

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\*Speaker



# Late Palaeolithic environment and human occupation in the eastern Baltic region: Latvia and Estonia

Ilga Zagorska \* <sup>1,2</sup>, Lembi Lougas<sup>†</sup>, Ivars Zupiņš<sup>‡</sup>, John Meadows<sup>§</sup>

<sup>1</sup> Institute of Latvian History at the University of Latvia (LVI) – Kalpaka bulvāris 4, Rīga LV-1050, Latvia

<sup>2</sup> Ilga Zagorska – Institute of History of Latvia, LU, Kalpaka bulv.4, LV 1050, Latvia

During the Late Palaeolithic in the eastern Baltic dominant species was reindeer (*Rangifer tarandus*), some bones and tusks from mammoth occur and the elk antler had been found, recently dated to the end of the Palaeolithic (beginning of Preboreal).

Reindeer has populated huge areas of the Pleistocene arctic steppe in Eurasia. During the Ice Age its northern distribution range in Europe has been reaching as far as north at the eastern Baltic region. However, our dated finds are coming only from the Late Pleistocene, the period, when Scandinavian ice sheet retreated from the eastern Baltic areas and before the start of comprehensive warming and afforestation process in Early Holocene.

Finds include also bone and antler artefacts - harpoon heads and Lungby axe, found at south-eastern and south-western parts of Latvia, and by radiocarbon method dated to the end of Palaeolithic (Younger Dryas and very beginning of Preboreal).

In this paper we discuss about reindeer and artefact finds in connection with the climate, environmental changes and human occupation in the eastern Baltic region, i.e., Latvia and Estonia with the special emphasis on the reasons of appearance and disappearance of arctic animals from the temperate zone.

**Keywords:** Final Palaeolithic, environment, first inhabitants, place in Northern Europe

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\*Speaker

†Corresponding author: lembilgs@tlu.ee

‡Corresponding author: ivars.zupins@ldm.gov.lv

§Corresponding author: jmeadows@leibniz.uni-kiel.de

# The Last Swiderians in the River Neris Basin, Lithuania

Gabriele Gudaitiene \*† 1

<sup>1</sup> Vilnius University [Vilnius] – Universiteto St, LT-01513 Vilnius, Lithuania

In the latest years archaeologists in Lithuania have come back to the research of the prehistoric Swiderian sites along the river Neris. New data from the excavations in Pabartoniai site was put in correlation with the revised data of the most famous surface find collections from the prehistoric Swiderian sites well known in archaeological literature of the 20th century. One of the main questions taken into consideration was the dating of the last Swiderians in the region, though the unfavorable circumstances – sandy type of settlements, lack of organic material and mixed multilayered stratigraphy – have made the investigation very difficult. Nevertheless, some insights about the way Swiderian inhabitants have lived in the river Neris Basin can be done. They broaden and at the same time adjust the previously formed vision of the last Final Palaeolithic–Early Mesolithic human behaviour in Lithuanian territory.

**Keywords:** Swiderian, Final Palaeolithic, Early Mesolithic

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\*Speaker

†Corresponding author: gabrielegudaitiene@gmail.com

# Upper Paleolithic finds on banks of the River Lielupe

Marcis Kalnins \* <sup>1</sup>

<sup>1</sup> Faculty of History and Philosophy , University of Latvia (LU VFF) – Aspazijas blvd. 5, Riga  
LV-1050, Latvia

Moderately high and steep banks of the upper course of the River Lielupe were already fully formed after retreat of the ice-sheet from territory of Latvia at the end of Late Glacial. However, rivers present-day middle course and delta was still under the shallow waters of Baltic Ice Lake. During Younger Dryas period at the final stage of Upper Paleolithic, the environmental and climatic conditions became suitable for large herbivores such as reindeer. The reindeer, moving in search of pasture to this region, was followed by hunters. The earliest traces left by first hunters are small flint assemblages from few sites situated on highest places on banks of the upper course of the river.

At the end of Younger Dryas and beginning of Preboreal period during the last Baltic Ice Lake transgression, the ancient hunters moved along the stream to the North, towards the present-day middle course of the river. This movement can be traced by the flint findings in several places. Potentially some of these sites might be possible to link with certain coastlines during the regression of Baltic Ice Lake.

Although the number of Paleolithic finds from the banks of the River Lielupe is rather small, according to technological and morphological similarities with other Upper Paleolithic sites in East Baltic region, it is possible to associate them with the Swidry tradition.

Since there have not been systematic surveys around the banks of the Lielupe, this area and river itself has great potential for new Paleolithic discoveries.

**Keywords:** Upper Paleolithic, Eastern Baltic, The River Lielupe

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\*Speaker