



**13.-18.03.2023**

**Scales of Social,  
Environmental &  
Cultural Change  
in Past Societies**

# **ABSTRACT BOOK**

[www.kielconference.uni-kiel.de](http://www.kielconference.uni-kiel.de)



**ROOTS**  
cluster of excellence

  
CRC 1266  
SCALES OF TRANSFORMATION

in certain periods is associated with climatic changes. For the Middle Bronze Age, the role of the Löss cold phase is discussed above all. This cold phase has been proven by strong glacier advances in the Alps (Ref01). "Löss" is thought to be responsible for the end of the lake dwellings after 1500 BC and their absence until after 1100 BC - the "missing period" (Ref02). The Löss cold phase is also used to justify the status of the Middle Bronze Age as a "dark age".

In clear contrast to this picture are the very numerous BzC and BzD settlements of the 15th to 13th century BC in northern Switzerland and the expansion in the Alps and the Jura mountains. Settlement expansion during a cold phase would be very unusual for traditional agricultural societies in Central Europe.

Current dendrodata on glacial advances and other climate indicators resolve this apparent contradiction. The Löss cold phase begins after 1800 and ends before 1400 BC. Between 1650 and 1500 BC is one of the coldest phases of the Holocene. On the other hand, the 14th-11th century BC is referred to in climate research as the "Bronze Age climatic optimum". Pollen analyses from Switzerland also indicate a warm phase and intensive agricultural use between 1450 and 1250 BC. The settlement expansion of the 15th-13th century BC thus falls into a climatically favourable phase and not into a cold phase. The absence of lake dwellings from c.1500-1100 BC is therefore obviously not the result of a climate deterioration (Ref03). Other, social, causes must be sought.

Some of the lake dwellings of the 17th/16th and of the 11th/10th centuries BC in the northern foreland of the Alps may therefore have been built as defensive settlements in times of climatically induced social crises. In contrast, in the climatically favourable periods of the 15th to 13th centuries, there was apparently no social need to build defensive lake dwellings.

#### References:

[Ref01] Le Roy, M./ Nicolussi, K/ Deline, P. et al., (2015), Calendar dated glacier variations in the western European Alps during the Neoglacial, *Quaternary Science Review*, 1-22, 108

[Ref02] Menotti, F. (2001), "The Missing Period": Middle Bronze Age Lake-Dwellings in the Alps, *BAR Int. Series*, Oxford, 968

[Ref03] Maise, Ch., (2022), Löss, Göschenen und die bronzezeitliche Besiedlung im Mittelland, *Jahrbuch Archäologie Schweiz*, Basel, 185-191, 105

### S35.253

## Human-environment interactions in the Middle Kama River Basin (pre-Urals, Russia) during the Holocene

V. Batalova<sup>1</sup>, P. Sannikov<sup>2</sup>, E. Orlova<sup>2</sup>, M. Pereskokov<sup>2</sup>, V. Mingalev<sup>3</sup>, L. Shumilovskikh<sup>1</sup>

<sup>1</sup>Georg-August-University of Göttingen, Göttingen, Germany, <sup>2</sup>Perm State University, Perm, Russian Federation, <sup>3</sup>Higher School of Economics, Perm, Russian Federation

The origin of cultures in the pre-Urals and the history of their development have been the subject for scientific debate for a long time. Most of the controversy is related to the Iron Age and Middle Ages of the Permian pre-Urals and focuses on the post-Ananyino time. Researchers note the importance of this period, which laid the foundations for the region's typical economic, cultural, social, and religious systems [1]. Post-Ananyino time in the pre-Urals region is associated with the existence of the Glyadenovo culture and formed after its disintegration of the Nevolino and Lomovatovo cultures. Despite almost a century of research history of this period in the pre-Urals, the subsistence economy of Iron Age and Middle Ages populations and their impact on the environment raise many questions. To trace the natural and land use history of this region in high temporal resolution, we collected an eight-meter peat core Shabunichi-I from the Paltinskoe peatland located on the fluvial terrace of the mid-Kama (Perm region, Russia). We will provide the new results from palaeoecological studies of vegetation, fire and settlement history over the last 9200 years based on AMS radiocarbon dating, loss-on-ignition, macro-charcoal, pollen and non-pollen palynomorphs. In our study we focus particularly on the Iron Age to test archaeological hypotheses about the causes of the disintegration and emergence of cultures in the Kama region. Our results show that signals of anthropogenic changes in vegetation are marked in the pollen assemblages since the Bronze Age (~3900 cal yr BP). However only since ~2000 cal yr BP, the vegetation dynamics was strongly influenced by anthropogenic activity and human-induced fires. Archaeobotanical data from archaeological excavations are in line with palynological investigations, showing that the Iron Age cultures practiced agriculture. Wood anatomy studies provide new insights in selective usage of wood. Our results correlate strong with other regional studies [2].

[1] Pereskokov, M.L., 2018. *Permskoe Priural'e v finale Rannego Zheleznogo Veka: monografija*. Perm: PGNIU.

[2] Shumilovskikh, L., Schmidt, M., Pereskokov, M., Sannikov, P., 2020. Postglacial history of East European boreal forests in the mid-Kama region, pre-Urals, Russia. *Boreas*, 49, 526-543.

### S35.254

## Exploring social and environmental factors that shaped the crop choice at a Younger Bronze Age settlement in north-eastern Germany

M. Oelbützel<sup>1,2</sup>, D. Filipović<sup>1,2,3</sup>, W. Kirleis<sup>1,2,3</sup>

<sup>1</sup>Institute of Prehistoric and Protohistoric Archaeology, Kiel University, Kiel, Germany, <sup>2</sup>CRC 1266, Kiel University, Kiel, Germany, <sup>3</sup>Cluster of Excellence ROOTS, Kiel University, Kiel, Germany

Modifications and innovations in plant food production can be an expression of cultural or environmental factors, or both. Here we take a rural settlement in north-eastern Germany as a case-study and explore cultural and environmental factors that potentially shaped the choice of crops produced and consumed by its inhabitants. This is the Younger Bronze Age site of Dobbin 27 in Mecklenburg-Vorpommern, dated to the period 1100-500 BCE. It comprises domestic structures such as