Between the 18th and 20th centuries the Limousin region was notably lacking in woodland: the level of forest in the landscape was less than 10%. However, it was during this period that the development of the Limoges porcelain industry, a major fuel consumer, took place. Alongside this industrial boom, the urban population was also thriving, thus the need for fuel in the city became even greater.

The 19th century was a period that put great pressure on firewood resources and one wonders how, and to what extent, the population and industry in the city of Limoges were able to meet their considerable fuel requirements. We therefore look at sources that can better trace the evolution of fuel consumption in Limoges. By combining historical sources, we analyse the heavy fuel consumption of the city of Limoges in relation to resources available in the region and describe the different procurement strategies implemented. The importance of the porcelain industry is discussed and we make a start on the evolution of the wooded landscape in the Limousin.
Many of the old excavation reports and publications contain notes about piles that have been found, but not much effort has been placed on the interpretation of the finds. That kind of information is also found in reports about other important monuments such as the settlements of Kunda and Tamula. Is it possible for us today to rely on results of excavations conducted 50 and more years ago, and prove that these archaeological monuments contain evidence also about pile dwelling? And if this is not possible to be done with archival research, then which studies and methods could give a result?

TH6-11 Abstract 03
The settlements of Kryvina peat-bog region in the context of cultural changes of 3 - 2 millennium BC
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Keywords - Kryvina peat-bog micro-region, Late Neolithic - Bronze Age, Northern Belarus (Lakesland region)
Presentation Preference - Oral

Kryvina peat-bog is an archaeological microregion located in Vitebsk region of the Republic of Belarus (south of Belarusian Lakeland geographical region). To date, there are 10 archaeological settlements of Neolithic - Bronze Age period. The earliest belongs to the 4th millennium BC, and the most recent - to the middle/3rd quarter of the 2nd millennium BC. The majority of the sites of the region are presented by the materials of 3rd - first half of 2nd millennium BC which belongs to Usviaty and North-Belarusian cultures. 9 monuments preserve organics in the cultural layers, 8 of them are peat-bog sites. The most studied settlements of the micro-region are Kryvina 1, Asasavc 2 and Asasavc 7 settlements. Since 2010, the Asasavc 2 settlement was annually researched by the joint expedition of the Institute of History of NAS of Belarus and the Faculty of History of Belarus State University under the guidance of Michal Chaniakiuski and Maxim Chaniakiuski. In the southern part of the site 27 square meters were excavated. The use of new approaches in the field studies and the analysis of the received materials (in comparison with former methods) has allowed to clarify and obtain new information on the household, material and spiritual culture of the population of the region. We should also mention the identification of the immediate materials of the circle of Corded Ware cultures and the Globular Amphora culture on the settlement, which allowed to reconstruct the process of transformation of Usviaty culture into North-Belarusian cultures.

TH6-11 Abstract 04
Landscape and natural resources use in the 3rd mill BC by pile-settlements’ dwellers in NW Russia
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Presentation Preference - Oral

The lacustrine pile dwellings, appeared at the first half of the 4th mill BC, were unique sites among the Middle Neolithic cultures of the forest zone of northeastern Europe. Spatial analysis of lacustrine pile dwellings in the study area reveals a clear subsistence pattern based on catchment area, included three distinct landscape types: 1) depressions with lakes, mires and valley floors with peat soils and mud soils; 2) morainic plateau with predominantly clayey soils covered by broad-leaved trees; 3) gleyfoultluvial outwash plains with sandy, podzolic soils. The combination of these types of landscape made possible a hunter-gatherer economy and strongly contributed to the settlement system at this time. Decrease (periodic?) of lake water level and development of fluvial system in places can be also supposed. Only specific types of landscapes with high geodiversity were chosen to be done with archival research, then which studies and methods could give a result?

The pile dwelling settlements were situated at the boundary of different landscape types that provided the basis of a productive hunting and gathering economy, and supplied as a resource for different wood, plant and bone material, raw materials for pottery making. It remained the typical settlement pattern for over a millennium. The inhabitants of such settlements left a unique material culture with a particular toolkits and pieces of art.

TH6-11 Abstract 05
Pile dwellers in the Sukhona basin?
New Russian-German research at Veksa, Northern Russia
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Keywords: Neolithic, Northwest Russia, Pile concentration
Presentation Preference - Oral

The settlement remains of Veksa c. 400 km north of Moscow represent a pivotal site with regard to the cultural development in northeastern Russia. Extending along the left bank of River Volga in the Sukhona basin, the site is located on an important river confluence. Its exceptional significance is due to the clearly stratiﬁed sequence of archaeological layers up to 3 m thick which encompasses all periods from the Early Neolithic through to the Medieval period. Veksa yields the rare opportunity to follow the local cultural, typological and economic developments and their links to environmental history over eight millennia. A multidisciplinary Russian-German field project led by Volgoda State Museum and the German Archaeological Institute started in 2015. It combines archaeological research with archaeobiology, palaeogeography and dendrochronology in order to generate new high-quality data on human-environment interactions at Veksa on a diachronic level. Stone Age remains are especially well preserved at Veksa due to partial water-loggy. They include a concentration of almost 2000 wooden stakes and piles standing upright in several clusters along a 350 m long stretch of the river bank. Radiocarbon dates place the main concentration in the Late Neolithic around 3500 BC. Thus, the concentration of wooden piles at Veksa is chronologically associated with a period of pile dwelling construction in the Late Stone and Early Metal Ages noticeable from the Alps in the south-west to the eastern Omega region in the north-east.

The project seeks to understand the dynamics of the individual piles and the overall organisation and use of the site during the Neolithic to Bronze Age transition. To achieve this, the pile dwelling sites will be compared to a large number of other sites throughout the study region in terms of size, preservation and associated artefacts and faunal remains. The project has recently been extended to the Late Stone Age to include research into the different patterns of activity at the site. The project will also consider the use of the site in the Bronze Age. A multidisciplinary collection of methods will be used to characterise the piles and their associated artefacts and faunal remains. The significance of this project is to increase our understanding of Neolithic and Bronze Age settlements in northeastern Russia, and to provide information on land use and the relationship between the archaeological site and its surrounding environment.

The project will extend the understanding of the Neolithic and Bronze Age landscape of the Northern Urals, and contribute to a larger picture of the role of southwest Russia in the Neolithic and Bronze Age and the spread of the Corded Ware culture.
TH6-11 Abstract 07
Characterization of activity areas in the early Neolithic site of La Draga (Spain)

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Keywords: Activity areas, Neolithic, Spatial analysis

Presentation Preference: Oral

The early Neolithic site of La Draga is located on the shore of Lake Banyoles, in north-east of Iberian Peninsula (Spain). The site has provided evidences of two phases of occupation dated between 5300-4700 cal BC. The preservation of the site differs depending on the proximity to the lake. In some parts of the site a layer of well-preserved wood has been documented, corresponding to the earliest phase. In other sectors only the tips of the poles stuck in the lacustrine chalk are preserved. The spatial analysis of the remains recovered at the site aims to identify possible areas of activity and characterize them. In-situ spatial analysis of different categories of remains have been explored in order to set boundaries and relationships between different spaces.

TH6-11 Abstract 08
Wood architecture in the Early Neolithic (5300-5000 cal BC) site of La Draga (NE of Ibiza)

Author: - Dr. Oriol, López-Buitl, Universitat Autònoma de Barcelona, Barcelona, Spain (Presenting author)

Keywords: Early Neolithic, Iberian Peninsula, Pile-dwelling

Presentation Preference: Oral

La Draga is the only Neolithic pile-dwelling site of the Iberian Peninsula. It is located on the shore of the Banyoles Lake (Girona, Spain) in the North-east of the Iberian Peninsula. The site was occupied during early Neolithic (5300-4900 cal BC). The remains of wood recovered at the site have been studied with the objective of characterizing the wood management process: obtaining of raw material, woodworking technology and the use as tools or construction elements. At this process is usually hidden being allocated with archaeological, but its economic and social implications are of great relevance. The analyses of wood elements had been carried out involving a wide range of different methodologies: dendrology, description of morphology, experimentation, tool-marks, use-wear and 3D modeling.

In this work are summarized the results of the analyses of the architectural elements. We outline the main characteristics of the building process of the wooden constructions at La Draga, from the obtaining of the raw material to its use for architecture, through its elaboration process.

The analysis of architectural elements (beams, posts, planks, framework, etc.) show in one hand the predominance of certain species of raw material, season of obtaining, diameters and supports selected. In the other hand it has been spotted certain predominance on the elaboration process. Finally, a few master lines of the construction structure have been spotted.
A research project focusing on Lake Degersee in Southern Germany revealed settlement activity and land use in the hinterland of Lake Constance older than the onset of the dry-dwelling period at Lake Constance in the 40th century BC. The outcomes of recent archaeological and palynological projections suggest new settlement sites and human impact dating back to the 5th millennium (see contribution of Maminberger, this session). Within the tri-national project ‘Beyond Lake Villages – BELAVI’ palaeoenvironmental on-site and off-site data from the Western Altlau region are synthesised with archaeological records. The chronological basis and with it the relation to regional and over-regional vegetational and climatic records is established by high-resolution pollen, charcoal and sediments records on annually laminated lake sediments. dendrochronology and AMS radiocarbon dating.

With regard to the results of plant macrofossil and pollen analyses on the cultural layers at Degersee, we expect to provide further evidence of changes in subsistence strategies and landscape management in responses to environmental and climatic changes throughout the Neolithic period.

Dendrochronology provides information on woodland management of settlers at the periphery of Lake Constance. Main construction timber at Degersee comes from ash trees, and tree ring patterns show a cyclic settlement activity with repeated usage of small woodland plots with intermittent felling. Wood charcoal from cultural layers complement the spectrum of potentially selected construction timber, to gain a more complete picture of wood resource usage. Geoarchaeological investigations look into land use impacts, namely erosion, and together with the taxonomic analysis and dating of embedded charcoal can give further chronological as well as information on prehistoric vegetation cover.

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**TH6-11 Abstract 11**

**Wet, Wet, Wet: Neolithic wetland and lakeside settlements in the Balkans**

Author - Dr. Naumov, Gozo, Museum of Macedonia, Skopje, Macedonia (Presenting author)

Keywords: Balkans, pile dwellings, pottery and human representations

Presentation Preference - Oral

The Balkans is known as the first outflow of Neolithic societies that introduced the agriculture on the European continent. There is an abundance of publications and discussions on the ‘dryland’ settlements and their communities in this region, but there is not much on sites established within marshes and on lakeshores. Few of them were excavated, but their significant role in the modification of environment and incorporation of farming were neglected. Besides their specific features pile dwellings were rarely studied through the potentials of wetland archaeology and although this discipline is one of the most advantageous directions in understanding of the past landscapes it is still hardly introduced in the Balkans. There are number of lakeside settlements and prehistoric villages in marshy areas, but they are not thoroughly explored in relation to the environment, climate and more complex social networks.

Nevertheless, the excavations so far provided elementary information on the material culture and chronology of these sites and indicated the density of establishments on lake shores, river beds and tails within marshes. Pile dwellings were constructed by prehistoric communities on lake shores of the Lake Ohrid, Lake Prespa and Lake Ohjani, but recent recent discoveries on the Periphery of the Pelagonia valley indicate such constructions on the periphery of tell-sites in wetlands. The main focus in this paper will be on the Neolithic settlements in Lake Ohrid basin and Pelagonia, but a broad-spectrum overview of similar sites in the Balkans will be presented in order to emphasize the thorough networks of farming societies that inhabited wetlands and lakes.

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**TH6-11 Abstract 12**

**Live and survive in prehistory on northern shore of Ohrid lake**

Author - Todoroska, Valentina, NU. Museum Nikola Nezlobinski Struga, Macedonia (Presenting author)

Keywords: pile dwellings, tools

Presentation Preference - Oral

Aim of this presentation is to represent the pile dwelling settlements situated in northern part of Ohrid Lake. Movacele archeological finds in few of them, located in this part of the lake, indicates on fact that we can talk about pile dwelling settlements which existed in early prehistory: late Neolithic, Eneolithic also late Bronze and Iron Age. A huge concentration of pottery and tools will help us to complete the picture of this region in prehistory. Especially, focus will be given on tools used by people who lived in these regions and help them to survive and live traces of their existence.

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**TH6-11 Abstract 13**

**Neolithic environment and subsistence in the Western Altlau – first results of the BELAVI project**

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Keywords: human impact, Neolithic land use, subsistence

Presentation Preference - Oral

A research project focusing on Lake Degersee in Southern Germany revealed settlement activity and land use in the hinterland of Lake Constance older than the onset of the pile-dwelling period at Lake Constance in the 40th century BC. The outcomes of recent archaeological and palynological projections suggest new settlement sites and human impact dating back to the 5th millennium (see contribution of Maminberger, this session). Within the tri-national project ‘Beyond Lake Villages – BELAVI’ palaeoenvironmental on-site and off-site data from the Western Altlau region are synthesised with archaeological records. The chronological basis and with it the relation to regional and over-regional vegetational and climatic records is established by high-resolution pollen, charcoal and sedimentary records on annually laminated lake sediments, dendrochronology, and AMS radiocarbon dating.

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Dendrochronology provides information on woodland management of settlers at the periphery of Lake Constance. Main construction timber at Degersee comes from ash trees, and tree ring patterns show a cyclic settlement activity with repeated usage of small woodland plots with intermittent felling. Wood charcoal from cultural layers complement the spectrum of potentially selected construction timber, to gain a more complete picture of wood resource usage. Geoarchaeological investigations look into land use impacts, namely erosion, and together with the taxonomic analysis and dating of embedded charcoal can give further chronological as well as information on prehistoric vegetation cover.
palaeoenvironmental record for the research area; (ii) to enhance our understanding of landscape in terms of spatial networks (iii) to integrate palaeoenvironmental data sets with archaeological data. The research is conceived at three scales: (1) Micro-regional, to produce an accurate picture of the complete range of surviving archaeological features through intensive field survey; (2) Regional, incorporating LiDAR data and aerial photography to facilitate a systematic understanding of the archaeological landscape; and (3) Macro-regional, providing new socio-cultural, economic and ideological models/hypotheses that can be tested in subsequent interdisciplinary research.

TH6-11 Abstract 16
Beyond lake villages. Archaeological and palaeoecological research at Lake Burgäschi/Switzerland

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Keywords: 4th millennium settlements, palaeoecology, pike-welling archaeology Switzerland

Presentation Preference - Oral

In 2015 started the international research project “Beyond lake villages: Studying Neolithic environmental changes and human impact at small lakes in Switzerland, Germany and Austria.” (University of Bern in collaboration with Landsdeindekmal Baden-Württemberg and University of Vienna, funding: SNF-DFG-FFW). Three archaeological and three palaeoecological teams work together on three small lakes on the Northern side of the Alps. The aim is to compare environmental changes and human impact of Neolithic societies. The Swiss study area is Lake Burgäschi, a small water body in the central part of the Swiss Midlands. Archaeological research started already in 1877 and several major excavation campaigns took place in the 1940ies and 1950ies. Up to now four settlement of the 4th millennium BC areas are known and single finds indicate settlement activities during the 5th and 3rd millennia BC. The presentation gives an overview on former and recent activities in one of the classic find spots of Swiss pike-wellings research. A special focus will be put on new archaeological and palaeoecological results.

TH6-11 Abstract 17
Above the lakes – Organic finds from Bronze Age mines in the Alps

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Keywords: Mines, Organic material

Presentation Preference - Oral

Organic finds fascinate as they convey exceptional insights into prehistoric daily life and work routine. Organic objects make up the bulk (far more than 90%) of material culture in the period from the Stone Age to very recent times (19th cent.).

Aside from underwater and wetland sites organic materials such as wood, fur, skin, leather and textiles have also been preserved in considerable numbers in several alpine mines (e.g. Hallstatt, Mitterberg). Those ancient mining relics are fundamentally different from the objects we know from wetland and underwater sites in terms of taphonomy, functionality and above all research history. Those tools handles, lightning tapes, buckets, mining timber, elements and so on are remnants of large scale prehistoric production systems. A particular difficulty in dealing with these objects lies in the uncertainty whether they represent highly specialized mining tools or tools commonly used in the settlements as well. Comparison with the organic finds from wetland and underwater sites is essential in the understanding of the finds from the alpine salt and copper mines. In addition the alpine finds present important complementary information in the analysis of organic finds from bog, wetlands and water bodies as certain materials that decay underwater are preserved in the mines. Furthermore the Hallstatt salt mines offer also important early Iron Age find inventories. This is of major importance on two levels: (i) the evolution of organic material culture from the Bronze to the Iron Age can be observed; (ii) organic finds are far more rare in the European Iron Age than during the Bronze Age.
During the prehistorical time, trying to put in evidence how and why prehistoric people could have chosen to use water transport in such a particular environment. Then, moving from a preliminary analysis of the boats in use from Neolithic to Iron Age in the Alpine lakes, essentially based on the data we have from archaeological literature, the author deals with the possibility to link different boat-types to particular needs, related to the activities for which the boats themselves have been conceived in origin.

At last, the paper tries to put in evidence how this particular topic can be of interest not only to have a precise idea of the relationship between dwelling sites and waterways in the prehistory of the Alpine region, but in a wider area. Considering naval iconography and naval archaeology of the Mediterranean and the North, the author tries in fact to focus his attention on what we can learn about ancient shipbuilding thanks to the analysis of this basic ancient boat-type.

TH6-11 Abstract 21

**Pots, pans and dishes to understand food in a pile-dwelling Neolithic society**

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**Keywords:** Dairy products, Organic residues, Pottery use

**Presentation Preference** - Oral

Traditionally, pottery use has been discussed through morphological characteristics and mechanic properties of the vessels (Rice 1987) but amorphous organic residues analysis has also greatly contributed to understand exploitation of natural resources during the Holocene (Evershed 2008). Nevertheless these methodologies are rarely combined due to the high fragmentation of pottery and to the impossibility to link ceramic content with specific sites. At the site of Clairevaux (XIV Century, MBM, 39e-36th century BC), the large and diversified corpus of ceramic vessels (377 vessels with restituted profiles) combined to aronic condition favoring lipid preservation offers a unique opportunity to investigate the use of pottery to better understand lake dwelling Neolithic society (Paterquin et Paterquin 2015).

The corpus was first classified based on morphological and morphometric criteria. Chemical analysis of the lipids present in the surface of the samples was carried out using an analytical strategy combining chromatographic (HT GC), spectrometric (HT GC-MS, NanoESI MS and MS/MS – Mirabaud et al. 2007) and isotopic (GC-C-IRMS) techniques. The data obtained on 95 pottery conducted to: (i) the identification of a broad diversity of commodities processed in the vessels, mainly from animal origin, (ii) the establishment of clear relationships between content, traces of cooking, shape and size of the vessels.

This study highlights some characteristic consumption pattern of the Neolithic people living at Clairevaux XV in the first half of 4th millennium BC. First, a clear difference is observed between cooking pots and serving vessels. Dairy substances were significantly used in all category of ceramics but small individual vessels seem to be especially dedicated to the consumption or transformation of these high value products. The surprising low representation of fish and vegetable products may be due to the methodology used or to their distribution at the settlement. The distribution and diversity of plant remains found in our samples seem to show connections to several formation processes and routes of entry that we are trying to disentangle (lake action, animal dung, areas of accumulation taking place at the site of Clairevaux XV in the first half of 4th millennium BC).

TH6-11 Abstract 22

**Micro-economic and socio-cultural networks in lakeside settlements**

**Author** - Ma Spring, Markus, Zürich University, Oetwil am See, Switzerland (Presenting author)

**Keywords:** Neolithic–Bronze Age, Network analysis, Settlement archaeology

**Presentation Preference** - Oral

Urban morphologists are investigating the 'genetic code of cities', laws according to which modern cities emerged and grew. They have identified socio-economic processes that activate the act of building in which turn shapes urban space. The emergence of spatial pattern is seen as determined for the evolution of configurational networks. These networks, together with spatial agency of 'social movement', the flow of people to meet and interact, have a significant impact of the use of space in modern cities. Individuals move through micro-economically motivated 'foreground networks' that encourage the emergence of 'generative' land uses, such as retail, while movement-poor socio-culturally influenced background networks form 'conservative' residential areas.

Lakeside settlements, on the other hand, are – quite similar to space stations – built into for human habitation basically hostile environments. Swamp-born diseases posed constant health risks. And fluctuating water levels or seasonal flooding asked for structural solutions to still allow human activities and interactions despite adverse conditions.

The paper takes up the idea of the 'genetic code of cities' to look into network patterns of Neolithic and Bronze Age lakeside settlements. It explores the influences these specifically designed structural solutions required for life at, on, in or above water and marshlands had on human movement and interactions. Did these settlements under such environmental conditions follow the same spatial growth laws as modern cities? And, can such micro-economic and socio-cultural network analysis be a tool for interpreting cultural remains or functions of pile dwellings?

TH6-11 Abstract 23

**A new look to late Neolithic plant economy from the site of Parkhaus Opéra (Zürich, Switzerland)**

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**Keywords:** archaeobotany, GIS, sampling strategies

**Presentation Preference** - Oral

Archaeobotanical research in the Alpine Forlands has a long tradition. Abundant quality data have been produced since the seventies of the XIXth century. The Horgen period (ca. 3400 – 2900 cal BC) has been particularly well investigated, especially since the excavation of Arbon Bleiche 3. It was after this project that researchers realized that the representative sampling of lakeshore settlements with paleo-ecological aims (e.g. characterizing past agriculture and gathering practices, as well as diet) was only possible through the systematically-taken surface samples of large volume (ca. 5L).

With an optimal sampling strategy was conducted at the recently excavated late Neolithic layers of the site of Zürich-Parkhaus Opéra. Layers 13 and 14 date to the years around -3160 BC and -3090 BC respectively. Layer 13 was preserved over a surface of 3000 m². Layer 14 was documented in more or less good preservation in a smaller area of around 1000 m². A systematic large-scale sampling strategy was conducted, and a new method of analysis was developed for the interpretation of the data.

These large samples were subsampled before sieving, producing one large-volume (sieved with 8 and 2 mm sieve fractions, for the recovery of large-sized seeds and fruits) and one small-volume sample (sieved with 2 and 0.35 mm sieve fractions, for the recovery of the small-sized seeds). Around 250 large-volume samples (ca. 5 L) and ca. 120 small-volume samples (ca. 0.3 L) were investigated for layer 13 and 53 large-volume and 33 small-volume samples for layer 14. This allowed the recovery and identification of over 200'000 plant remains for layer 13 and around 40'000 for layer 14. The data were evaluated on the basis of density (remainder per litre of sediment) and ubiquity (percentage of samples in which a type of remain is present), as well as through qualitative evaluations of the spatial distribution of the concentration of remains at the site.

The large-scale sampling strategy applied allowed new observations concerning taphonomy and economic activities taking place at the settlement. The distribution and diversity of plant remains found in our samples seem to show connections to several formation processes and routes of entry that we are trying to disentangle (lake action, animal dung, areas of accumulation of rubbish, etc.). In addition to this, a better evaluation of the role of some of the main crops like barley and pea, as well as the most relevant gathered plants, was possible, thanks to all these methodological improvements. Our aim with this presentation is to propose our strategy as an optimum for paleo-ecological evaluations of large-scale excavations in wetland settlements.
TH6-11 Abstract 24

**Settlement dynamics and mobility in Late Neolithic Southwest Germany**

**Author** - Kaiser, Mirjam, University Freiburg, Freiburg, Germany (Presenting author)  
**Keywords** - Late Neolithic, pile dwellings, settlement system  
**Presentation Preference** - Oral

In the last decade the intensive rescue excavations of the Archaeological Service of Flöra unearthed a great number of prehistoric settlements close to the four lakes of the Ammersee basin that date back from Greek Early Neolithic (6800-5800 BC) to Greek Middle Bronze Age (c. 2200/2100-1600/1500). The excavation of these sites yielded an impressive and diverse assemblage (more than 4000) of bone and antler artifacts which shows that, as in the prehistoric lakeside settlements of Central Europe, the osseous artifacts played an important role in the everyday activities of the inhabitants of the wetland sites of the region. In this short paper, there will be an attempt to present the osseous artifacts of some of these settlements.

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TH6-11 Abstract 25

**Bronze Age pile dwellings in Northern Italy:** chronology, environment and architectural features

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**Keywords** - Cultural interactions, northern Italy, pile dwellings  
**Presentation Preference** - Oral

In northern Italy the widest spread of pile-dwellings took place between the 22nd and the 15th century B.C., during Early and Middle Bronze Age and endured till the 1st phase of Late Bronze Age (13th century), with a considerable difference with situation North of the Alps. From around 2050 cal BC, we assist to the spread of pile-dwellings, mostly around the Lake Garda and its marmorine amphitheatre, but also in the lakes of the inner areas of the Berici and Euganean hills. This period is therefore characterised by strong cultural changes and radical reorganization of settlement patterns and socio-economic systems. Some recent excavations allows us to follow the technological and cultural evolution of the communities living in the area and to identify the development of the architectural techniques. The study of findings shows long distance interactions and cultural relationships with Western, Central and Eastern Europe. Interesting is the connection between Varesse lake and Swiss plateau and between the Garda lake and the Danube basin. In the pile-dwelling villages the extraordinary preservation of organic remains concerns not only wooden structures, but even a lot of tools made with perishable materials. Thanks to those we can build a true-to-life reconstruction of these communities. The study of the finds and the data obtained from multidisciplinary researches shows us an economy based on cultivated fields and animal husbandry. Craftsmanship becomes more organized and integrated in the communities only starting from Middle Bronze Age. Subsistence economy mainly bases on cereals agriculture; hunting and fishing constitute a part of the diet, integrated with harvesting of spontaneous fruits. The abundance of cornels, hazelnuts and acorns shows how the inhabitants of the pile-dwellings intensively exploited the areas around the villages.

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TH6-11 Abstract 26

**Osseous artifacts from the prehistoric lakeside settlements of Amindaeon, Western Macedonia, Greece**

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In the last decade the intensive rescue excavations of the Archaeological Service of Flöra unearthed a great number of prehistoric settlements close to the four lakes of the Ammersee basin that date back from Greek Early Neolithic (6800-5800 BC) to Greek Middle Bronze Age (c. 2200/2100-1600/1500). The excavation of these sites yielded an impressive and diverse assemblage (more than 4000) of bone and antler artifacts which shows that, as in the prehistoric lakeside settlements of Central Europe, the osseous artifacts played an important role in the everyday activities of the inhabitants of the wetland sites of the region. In this short paper, there will be an attempt to present the osseous artifacts of some of these settlements.

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TH6-11 Abstract 27

**Cultural layer formation, production and dwelling areas on pile-settlements of Upper Dvina region**

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**Co-author(s)** - Zaiceva, Ganna, Institute for the history of material culture of RAS, Saint-Petersburg, Russian Federation  
**Presentation Preference** - Poster

Different processes, conditions and milieu of cultural layers’ formation were described on Neolith pile dwellings sites excavated in Upper Dvina region. The site Serkaia II (remains of pile dwelling settlement from the 3rd mill BC) is situated in the floor of a Holocene post-lake basin and archaeological structures occur within coarse-detritus gyttja at the depth of approx. 80-150 cm b.g.l. Although any sediments synchronous to the time of pile-dwelling settlement existence were not revealed - the conclusion based on the analysis of sediments in trenches and a hand auger coring at the site area and immediate surrounding and radiocarbon dating of organic deposits and different ancient artefacts and constructions’ remains. It testifies that the site was established on the open surface not covered constantly by water. It is an important observation for understanding cultural layers’ formation and process of cultural remains deposition, as well as depositional processes of sedimentation on this place. Several zones with artificial structures and artifacts in situ were uncovered at the site - they were: nuts, fish bones, shells and other materials, not mixed, which occasionally and intentionally were accumulated in pits or garbage heaps, nearby preserved remains of dwellings. They could be interpreted as open production areas. Inside the remains of wooden constructions, sandy platforms for fire-places were recorded - remains of all year production areas, which were deposited in another manner.

We could also suppose a much higher erosion of the upper cultural layer, where material was admixed by environmental factors during milieu changes (lake’s regressions/transgressions) in the process of its deposition. Here we can trace clay penetration and materials accumulation around wooden piles, fragmentarity of artifacts, and homogeneous distribution of material within the cultural layer.

Other particular layers and other organic remains were uncovered at the site Serkaia I, with fishing constructions synchronous to Neolithic pile-dwellings. Thin interlaminations, fulfilled with small branches, leaves, and reed remains were uncovered, which were deposited in the zone of ancient lake shore line. Accumulation of branches is recorded in the marginal part of the Serkaia II site, also in the buried lake shore zone.

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TH6-11 Abstract 28

**Geophysical prospection of submerged Neolithic settlements in Lake Sennits (Pakov Osl., NW Russia)**

**Author** - Dr. Lorenz, Sebastian, University of Greifswald, Greifswald, Germany (Presenting author)  
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**Co-author(s)** - Dr. Mazurkiewicz, Andrzej, The State Hermitage Museum, Saint-Petersburg, Russian Federation  
**Co-author(s)** - Dr. Dolidze, Angelina, The State Hermitage Museum, Saint-Petersburg, Russian Federation  
**Keywords** - geophysics, Neolithic, Sennits  
**Presentation Preference** - Poster

First archaeological sites on the bottom of Lake Sennits (13 km2, 148 m a.s.l.), located in NW Russia on the border with Belorussia were uncovered in the 1970s. These lacustrine sites, dated to the 4th-3rd mill BC, were located along the shore of small lake basins and rivers distributed on the recent lake bottom. They comprise the first settlements of LBK communities in this region, prehistoric pile-dwellings, and the eastern most megalithic construction of the 3rd mill BC known so far in Europe. Lots of unique
artifacts were found here, among which a wooden Neolithic ski, wooden zoomorphic figures, bone flutes etc. However, during last
20 years the cultural layer on the bottom of the lake was either destroyed due to lake-level drawdown or buried under modern lake
sediments. Another particular feature of this lake is its zero visibility caused by shallow bathymetry and high nutrient loads which
makes any common archaeological prospection even more difficult.

In order to find further traces of archaeological constructions and cultural layers a range of remote sensing and geophysical
methods, both underwater and on the peat bog shore were applied. For magnetic prospections on the peat-bog shore of the lake
we applied the highly sensitive total field caesium-magnetometer (±0.01 nT) in a variometer configuration. Combined with a high
spatial resolution (sampling rate of 12.5 x 25 cm) the results allow us also to detect the weak magnetic signals of archaeological
structures of wooden constructions such as rows of post or parts of post-build houses, fish-traps, but also very clearly the traces
of paleochannels and the typical strong magnetic anomalies which could be ascribed to ancient fireplaces or kilns.

Supplementing the archaeological underwater surveys three sites in the littoral fringe have been investigated by dense
side scan sonar tracks with varying frequencies (80/200 KHz). The sonar mapping revealed details in lake bottom morphology,
which is is recently enveloped by soft sediments as well as the precise distribution of ancient wood and constructions on the
sites. These prospections not only allowed us to reconstruct in details paleolandscape, precise distribution of ancient stone
and wooden constructions on the sites and to define and to locate the places for further excavations but moreover provides us a
comprehensive approach to the site.

TH6-11 Abstract 29

Planigraphy and design features of the Neolithic
from the North region of Lake Baikal

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Keywords: Baikal region, Neolithic, Planigraphy

Presentation Preference - Poster

Various functionality of archaeological objects is determined by the characteristics of their layout and design. It always goes
both with practical issues and with the sacred and social views. The ability to follow the example of one of the sections of the
Baikal coast features of the organization of different types of archaeological objects of the Early Bronze Age is unique. Nowhere
in the Baikal region is not identified neighborhoods in which would be located close to each other burial grounds, settlements,
parking and a Bronze Age sanctuary. Materials from the north-west coast of the lake make it possible to model a complex of human
exploration of the surrounding area, taking into account both profane and sacred elements. There are currently aware of only one
archaeological site of the Baikal region - Baikal III, wherein the remains of the Early Bronze Age dwellings found. Located on the
northwest coast of the lake, Baikal. The preserved part of the monument includes the sanctuary, contourd shaft and a moat, and
surrounding it with the southern and western sides of the remains of dwellings. Visually, there are traces of six dwellings. On the
ground surface, they are expressed rounded holes. Stufed house to the Baikal III, began its existence in the Neolithic period. This
is evidenced by the finds at the bottom of pits ceramic impressions mesh braids and radiocarbon dates obtained from the remains
of bones and charcoal. With the period of the early Bronze Age associated the second stage of their existence. Saturation pits
finds this time indicates that at this time in the life of the settlement was the most active. Dwellings were kind of huts. Their lower
part occupied square pit with rounded corners, a depth of 0.35-0.50 m, oriented along the line northeast – southwest. The walls of
the excavation, vertical, floor, or even a slight decrease to the east wall. Dimensions homes ranged from 6,5 х 8,5 8,5 х 10 м to
m. The total area of houses from 50 to 80 square meters.m. In the south-western part of the home is fixed entrance, decorated in the
form of an inclined ramp in width from 1 to 2m. The eastern wall of the home was a continuation of the entrance. Along it flowed
the economic life of the inhabitants. The western part of the home was a seating area. It found significantly fewer discoveries than
eastern part of the excavation. Location entrance also contributed to the fact that this part of the house was more isolated.
Closer to the center of the home was located hearth, which often obladenovoi stones. Top housing overlapped poles, the remains
of which were found along the edge of the pit, in the ancient land surface. Planigraphicheskoe location artifacts 1st cultural layer in
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TH6-12 Abstract 01

Ritual continuity and changing monuments
in the southern Sperin Mountains, Northern Ireland

Author - Dr. Brogan, Catriona, Queen’s University Belfast, Belfast, United Kingdom (Presenting author)

Keywords: Neolithic/ Bronze Age transition, Northern Ireland, Ritual landscapes

Presentation Preference - Oral

This paper argues that there was a surprising degree of spatial stability between Neolithic and Bronze Age ritual landscapes in
Northern Ireland despite substantial changes in funerary/practical practices. Taking the southern Sperin Mountains as a case-study,
it is shown that Bronze Age ritual activity tended to occur within established Neolithic ritual landscapes. The conclusion of this
paper discusses some of the possible reasons behind this stability including functional, ritual and political reasons.

The Sperin Mountains form the largest mountain range in Northern Ireland, stretching across the north-west of the country.
Glacial activity during the last ice-age has created a landscape of rolling mountains cut by deep gulls. Today the upper slopes of
the mountains are largely uninhabited as the spread of blanket peat has pushed settlement down into the foothills, with the often
barren and wind-swept uplands reserved for the seasonal grazing of cattle. It would, however, appear that these mountains were
not always so desolate.

During the course of the Irish Neolithic substantial anthropogenic changes occurred; as people began farming the land and
constructing megalithic tombs in which to bury their dead. These tombs are often regarded as being linked to ideas of ancestor
veneration, where the remains of the deceased symbolically fed the community to the land they had invested in. Landscape
analysis of the Sperin region reveals particularly high concentrations of Neolithic burial activity, suggesting that this may have
been perceived as a ritual landscape. The advent of the Bronze Age sees profound cultural changes throughout Ireland and evidence from a recent genetic
study has even indicated that there was a significant migration of people into Ireland (Cassidy et al. 2006). Within the funerary/
ritual sphere, megalithic burial is gradually abandoned as burial within cist and pits becomes more prevalent and new ritual

TH6-12 LANDSCAPES BEYOND THE BORDERS OF SPACE AND TIME.

change and continuity in economy, road systems, settlements and perceptions

Saturday, 3 September 2016, 09:00-18:30

Faculty of Philosophy, Room 307

Author - Turchetto, Jacopo, University of Padova, Padova, Italy (Presenting author)

Co-author(s) - Massa, Michele, University College London, London, United Kingdom

Presentation Preference - Regular session

Today’s landscapes are the result of a series of dynamic transformations, due both to natural and anthropic factors. Landscapes
are not static, indeed, and archaeologists have investigated manmade interaction through time, exploring, on the one hand, the
construction/modification of cultural landscapes, how changes in the natural settings may have affected human communities, or
how human behaviours may have affected the landscape. On the other hand phenomena of persistency, resilience and longue
dure are under everyone’s eyes and have been studied in different periods and regions.

But, to what extent can we talk of ‘change’ or ‘continuity’? Which factors played a major role in the former case and which ones
determined the latter? Were they altogether of natural or anthropic character?

We would like to discuss the following issues:
1) how changes in natural factors (e.g. coastal progreadation, desertification, marshification, erosion, sedimentation,
deforestation) may have impacted human communities through time, particularly regarding settlement location choices
and the shape of roads/routes networks. Of particular significance would be to explore the spatial scale (local/regional/
macro-regional) at which they could effectively have changed patterns of human behaviour;
2) why past communities chose to change settlement location, or instead to stay in the same place for centuries; to what
extent this was driven by the need/possibility to find natural resources within reasonable distance from the settlement, and
to what extent it represents a cultural behaviour;
3) how changes in the original meaning of monuments incorporated within the landscape (e.g. henges, barrows, rock-cut
reliefs, cave paintings, settlement ruins) may have changed the perception of that same landscape, leading to different
discourse/legislations’ or re-use in different social contexts

This session will be open to theoretical and methodological papers, thus allowing any ‘landscape’ and chronological period
to be considered, providing they seek to emphasise especially interdisciplinary and multi-disciplinary approaches.