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An urban craft in rural settings?
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CONTENTS

TH1 INTERPRETING THE ARCHAEOLOGICAL RECORD

TH1-01 Archaeo-Oriithology: Figurations of Human-Bird Interfaces in Prehistory and Early History ........... 7
TH1-02 Retification Processes in (Pre-)History ......................................................... 14
TH1-03 Homo Ludens Medievalis: Towards an Archaeology of Medieval Play .............................................. 19
TH1-04 The invisible constant. Building new frameworks for an archaeological understanding of migration as cultural behavior ........................................... 23
TH1-05 All that Glisters is Not Gold: New Approaches to Sumptuous Burials between Western Europe and the Eurasian Steppe ......................................................... 32
TH1-06 Lifestyles At Medieval Castles: Current Methodological Approaches ............................................. 39
TH1-07 The selective deposition of metalwork in the Bronze Age: a Pan-European phenomenon? .............. 43
TH1-08 Under the raised roof: creating the space for family and community ............................................. 54
TH1-09 Behind the glass: new reflections on glass in Iron Age societies ................................................. 61
TH1-10 Exploitation strategies of the animal environment of the last hunter-gatherers and first farmers in Europe ........................................................................................................... 67
TH1-11 Between landing sites and vizig - between emporium and town. Framing the early medieval urban development ........................................................................................................ 72
TH1-12 Costume complex (clothes and its attire): development, relationships, forms and technologies in time and expande ........................................................................................................... 84
TH1-13 Tradition and innovation in textile technology in Bronze Age Europe and the Mediterranean .......... 96
TH1-14 Child’s life - between play and work ............................................................................................... 103
TH1-15 Charting Otherworlds: Cemeteries as Cult Sites .............................................................................. 110
TH1-16 Lithic raw materials in prehistory: sourcing, network distribution and use ....................................... 118
TH1-17 Placing medieval buildings in context ............................................................................................ 127
TH1-18 Social dynamics and transformation during the Late Neolithic and Bronze Age ............................ 135
TH1-19 Food choice and alimentary practices: from meals to diet and from site to region – the difficulties and benefits of examinations of diet and dietary practices .......................................... 141
TH1-20 Regional and chronological development of fishing: its significance in past economies and their socioeconomic dynamics ........................................................... 150
TH1-21 After the flames. New approaches to the study of the Medieval sites with funeral cremations in Northern and Eastern Europe ........................................................................... 157
TH1-22 Mesolithic dwelling structures: from methodological approaches to archaeological interpretation ........................................................................................................................................... 164
TH1-23 Weights and weighting from the Bronze Age to the Middle Ages: perception, context, use .................. 169
TH1-25 Buried by bog bodies ....................................................................................................................... 175
TH1-26 The life biography of artefacts and ritual practice ........................................................................... 178
TH1-27 What’s it all worth? Material possessions and value in past societies ................................................. 185
TH1-28 Religious landscapes in the North Atlantic ....................................................................................... 195
TH1-29 Visualizing the Past. Exploring Meaningful Approaches in Interpreting the Archaeological Record through Illustrations and Reconstructions ............................................. 199
TH1-30 Evaluating the importance of oseous tools in the Early Holocene: a European perspective .......... 206
TH1-31 “Barbarians” of Eastern Europe in the system of cross-cultural interactions .................................... 210
TH1-32 Iron making techniques and social change in the medieval and early modern Europe ...................... 222
TH1-33 Methodologies to investigate social, cultural and demographic processes in migration periods ........ 226
TH1-34 What If We Build This Here? Spatial Patterns, Community Organization, and Identity at Nucleated Settlements ........................................................................................................... 229
TH1-35 Build with mud brick in the Neolithic: technical constraints and cultural choice ............................ 240
ARCHAEO-ORNITHOLOGY: FIGURATIONS OF HUMAN-BIRD INTERFACES IN PREHISTORY AND EARLY HISTORY

Thursday, 1 September 2016, 9:00-16:00
Faculty of Philosophy, Room 214p
Author: Kost, Catrin, Munich University, Munich, Germany (Presenting author)
Co-author(s): - Hussain, Shumon, Faculty of Archaeology, Leiden, Netherlands
Keywords: human-bird interfaces, ontology, symmetry
Presentation Preference: Oral

This paper situates the study of human-bird interfaces within current theoretical frameworks and perspectives provided by the spatial turn/landscape theory, the animal turn, the ontological turn, symmetrical archaeologies/post-humanism and speculative realism. We delineate the potential and significance of studying the human-bird intersection within past archaeological contexts.

INTRODUCTORY REMARKS: THE STUDY OF HUMAN-BIRD INTERFACES AS ARCHAEO-ORNITHOLOGY

Author: M.A. Hussain, Shumon T., Universiteit Leiden, Leiden, Netherlands (Presenting author)
Co-author(s): - Dr. Kost, Catrin, LMU Munich, Munich, Germany
Keywords: human-bird interfaces, ontology, symmetry
Presentation Preference: Oral

This paper situates the study of human-bird interfaces within current theoretical frameworks and perspectives provided by the spatial turn/landscape theory, the animal turn, the ontological turn, symmetrical archaeologies/post-humanism and speculative realism. We delineate the potential and significance of studying the human-bird intersection within past archaeological contexts.

TH1-01 Abstract 01

ARCHAEO-ORNITHOLOGY: FIGURATIONS OF HUMAN-BIRD INTERFACES IN PREHISTORY AND EARLY HISTORY

TH1-01 Abstract 02

Gazing at owls? Strigiformes as important parts of East-Central European Gravettian lifeworlds

Author: M.A. Hussain, Shumon T., Universiteit Leiden, Leiden, Netherlands (Presenting author)
Keywords: Gravettian, human-bird interfaces, owls
Presentation Preference: Oral

The East-Central European Gravettian is known for its distinct regional profile. Its archaeological record is rich in organic materials and artefacts as well as in so called non-utilitarian objects, and features large-scale open air sites with evidence for permanent structures and reduced settlement mobility. Among the numerous theriomorphic representations, owls and owl-like creatures occupy a prominent position in the reservoir of motifs and ideas that defines this regional entity within the wider Gravettian phenomenon. This paper argues that the figuration of owls appears to directly reflect the structure of the human-owl intersection in this particular spatiotemporal setting. Depicting owls and owl-like beings must therefore be understood as an expression of negotiating the human-owl interface and consequently as an indication of meaningful and highly significant human-owl relations in this part of the Gravettian world. By drawing together available evidence for the specifics of the various environmental, climatic, vegetational, faunal and
TH1-01 Abstract 03

Spirit Birds at Neolithic čatalhöyük

Author: Professor Russell, Nerissa, Cornell University, Ithaca, NY, United States of America (Presenting author)

Keywords: Anatolia, Neolithic, zooarchaeology

Presentation Preference: Oral

As they soar into the air and dive below the water’s surface, birds inspire awe for their superhuman capacity to pass among earth, air, and water. They are often seen as belonging to the spirit world, or at least as messengers to and from that world. Whereas at earlier sites in the region birds made a significant contribution to human diet, at Neolithic čatalhöyük in Central Anatolia their nutritional significance is small. Body part distributions suggest that for the most part feathers were more important than meat. Bird remains, mainly the feathery parts of wings, appear in a number of special deposits at čatalhöyük. Together with artistic representations, these deposits suggest that cranes and vultures played key roles in life cycle transitions and were invoked mimetically through dance. Additionally, waterbirds, particularly in association with newborn human infants, may have mediated between human and spirit worlds. Although there is little indication that čatalhöyük residents made much use of brightly-colored feathers, bird wing deposits do attest to the importance of color symbolism at the site. Thus bird remains offer material evidence of aspects of Neolithic cosmoology and ontology.

TH1-01 Abstract 04

The Human-Bird Interfaces in the Eneolithic period from Balkans

Author: Dr. Lazar, Catalin, National History Museum of Romania, Bucharest, Romania (Presenting author)

Co-author(s): Balasnescu, Adriam, National History Museum of Romania, Bucharest, Romania

Keywords: Balkans, Birds figurines, Eneolithic

Presentation Preference: Oral

The aim of this paper is to explore the complex interaction between humans and birds in the Kochadzermen-Gumelnita-Karanovo VI communities (ca. 4500-3800 BC) from the Balkans (Romania and Bulgaria).

Thus, our investigation will cover the bird figurines iconography study from some key-sites in the target area (e.g. Merulita, Sutuna, Vlaseasti, Yunatala, etc.), in correlation with the zooarchaeological analyses, in order to identify the significance of avian species in the Eneolithic societies, both symbolically and economically. A special attention will be granted to some hybrid type of figurines that combines the anthropomorphic and zoomorphic elements of humans and birds because it reflects the best interface between both species, and it may help to decipher the particular biographies of those past communities.

This approach brings a whole new perspective on the construction of human-bird interfaces in prehistory, and how some specific artifacts (the hybrid human-bird figurines) have the potential to redefine the role of birds in the human societies. This research is funded by a grant of the Romanian National Authority for Scientific Research, CNCS – UEFISCDI, project numbers PN-II-ID-PCE-2011-3-1015.

TH1-01 Abstract 05

Birds in the cave painting during the recent Prehistory in the south of the Iberian Peninsula

Author: Professora Lazarch, Maria, Universidad de Cadiz, Cadiz, Spain (Presenting author)

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Keywords: birds rock painting, megalithic tombs, Recent Prehistory

Presentation Preference: Oral

Birds were not one of the favourite issues in order to be used for rock paintings in the Iberian Peninsula. In spite of that, in the southern end of Spain it is focused the greatest amount of this kind of artistic manifestations. We are referring to the shelter of Taço de las Figuras (Benalup-Casas Viejas, Cadiz), which represents the 99.94% of the total of bird representations of postglacial/rock paintings in the Iberian Peninsula. In 17 square meters of wall surface 962 pictograms are represented, of which 208 are social contexts of the East-Central European Greavetian, we show that birds are salient agents for Middle Upper Palaeolithic foragers which are thrown into these ecclesiastical constellations. The spatio-ecological and sociocultural conditions of human-bird interactions might therefore explain the activity for materializing representing birds in this context. The paper concludes by pondering on some implications for how we might interpret the ‘foreign’ ontology of Greavetian and Pavlovian people in East-Central Europe.

TH1-01 Abstract 06

Omnisent or just omnipresent? The perceived role of birds in Early Iron Age Slovenia

Author: Dr. Caroline Cartwright, The British Museum, Department of Science, London, United Kingdom

Co-author(s): Dr. Fletcher, Alexandra, The British Museum, Middle East Department, London, United Kingdom

Co-author(s): Dr. Hodos, Tamar, University of Bristol, Department of Archaeology and Anthropology, Bristol, United Kingdom

Keywords: Iron Age, Mediterranean region, ostrich eggs shells

Presentation Preference: Oral

Human-bird relationships in Early Iron Age Slovenia are marked by apparent contradictions – remains of birds are extremely rare in the zooarchaeological record as a whole, and completely absent from mortuary contexts that are otherwise notable for the deposition of animal remains. Yet birds are the most commonly represented animal in Early Iron Age art, and artifacts decorated in the local Silita Art style depict birds in almost every scene. Experience of birds would have been relatively constant – birds are almost always present, yet human relationships with them were likely based more on observation than direct interaction. The distinction of these animals was drawn upon and reinforced in local artistic representations, cementing their place as ideologically significant and set apart from domesticates and other wild animals. In this case study, depictions of birds from the Dolenjška Hallstatt culture of southeastern Slovenia will be presented in the context of local human-bird interactions, and modes of depiction as well as contextual analyses of avian imagery will be presented to elucidate the Hallstatt experience and ideologies. It is proposed that not only were birds considered important observers of human action, but in addition birds may have played an important role in ritual, mediating between humans and other animals as well as between humans and extra-human forces.

TH1-01 Abstract 07

“„No one was lucky enough to capture an ostrich“ - The sociocultural meaning of ostriches and eggs

Author: Dr. Markus, Yvonne, Wuppertal, Germany (Presenting author)

Co-author(s): Dr. Hodas, Tamar, University of Bristol, Department of Archaeology and Anthropology, Bristol, United Kingdom

Co-author(s): Dr. Fletcher, Alexandra, The British Museum, Middle East Department, London, United Kingdom

Keywords: Iron Age, Mediterranean region, ostrich eggs shells

Presentation Preference: Oral

As this quotation of Xenophon (Anabasis I, 5) suggests, ostriches were the ultimate free-ranging animal during the Iron Age (c. 1200-300 BC). Their Mediterranean habitats covered North Africa, Egypt, Anatolia and further east. Their cultural significance is already well documented in the Bronze Age. Egyptian and Libyan pre-Iron Age art depict ostrich hunts. The ostrich was connected to the Babylonian goddess Tiamat, and in Egyptian mythology Maat, goddess of truth and justice, wears an ostrich feather. Wall paintings and inscriptions show offerings of feathers and eggs to various Egyptian Pharaohs, and numerous archaeological finds demonstrate that ostrich eggs were used as votive offerings in temples; ostrich eggs were also among the cargo of the Uburburn shipwreck. The shells were manufactured as amulets or beads for necklaces and earrings, or reworked into containers, flasks, cups and other vessels.

During the Iron Age engraved or painted ostrich egg vessels were a luxury item shared between many Mediterranean civilizations, from Assyria, Egypt, Greece, Etruria and beyond. Aside from noting them in funerary and dedicatory contexts, no research to date has sought to understand their trade mechanisms. Iron Age Assyrain iconography depicts ostriches as wild beasts conquered only by the king/hero, and ostrich bones are rarely found in excavated Iron Age sites. This suggests ostrich eggs were obtained from the wild, only achievable if nest sites are known. The quantity of surviving ostrich eggs suggests lively Iron Age Mediterranean-wide trade. Could that demand be met solely from wild acquisition? Reliefs of Assyrian lion hunts show that wild lions were penned and hunts staged. Could the reality of ostrich egg acquisition have involved captive birds rather than opportunistic retrieval? Did this luxury trade therefore...
Interpreting the Archaeological Record

TH1-01  Abstract 08

Human-Bird interfaces in Han-dynasty China
displayed through kingfisher-ornaments in graves

Author: Dr. Kost, Catrijn, Munich University, Graduate School “Distant Worlds”, Munich, Germany (Presenting author)
Keywords: China, human-bird interfaces, kingfisher

Presentation Preference: Oral

Kingfishers feature prominently in Chinese art. They are a common topic in medieval poetry and their brilliant plumage – a symbol of beauty – was used to adorn headresses, combs, fans and screens. Clearly mentioned as creatures living in regions to the south or in the south of the Chinese empire, historical records suggest that already during the 2nd century BCE local groups sent kingfisher feathers and sometimes even live birds to the imperial court as tribute. Even though kingfishers seem to have been known throughout a larger part of ancient China, this talk focuses on depictions that stem from regions forming part of the natural habitat of various species of Acanedideae – namely the modern-day provinces of Sichuan, Guizhou, Yunnan and Guangxi. Dating to the times of the Western Han (206 BCE-9 AD) and Eastern Han (25–220 AD), graves uncovered there contain small kingfisher-figures made of clay and metal as well as depictions of the birds on tomb tiles. These representations thus provide the opportunity to reflect upon the construction of kingfisher-human interfaces as motivated through close contact and observation. The analysis of how kingfisher depictions were used in the funerary context further allows for conclusions about the possible meanings assigned to these animals. Ultimately, these findings can be contrasted with the modes of exploitation and usage of kingfishers in other regions of ancient China.

Keywords:

TH1-01  Abstract 09

Symbolic side of human-bird interfaces in the Late Iron Age (800-1200/1250 AD) Eastern Baltic

Author: Kuriso, Tuuk, ZBBA/Tallinn University, Schleswig, Germany (Presenting author)
Keywords: Eastern Baltic, Late Iron Age, pendants

Presentation Preference: Oral

The aim of this paper is to discuss bird-related pendants in the Late Iron Age (800-1200/1250 AD) Eastern Baltic. The symbolic side of the human-bird relationship is usually approached through folklore, emphasising the importance of a Baltic-Finnic creation song in which the world is formed of eggs laid by a bird. In order to expand the current scope of interpretations, one should focus on archaeological materials and find contexts. Bird-related pendants are the most direct evidence in the material culture that indicate the special role of birds in these peoples’ worldview. Most of these pendants are cast alloy specimens that vary in style and presumably depict several species. The rest of the pendants were made from wing bones and claws. They have been found in settlements, burial sites, hoards, ritual burials and cremation burials, which points to broad usage and multifaceted meanings. In this paper bird-related pendants are juxtaposed with folklore along with a comparison of species. Additionally, interpretations that connect these finds to status and Finno-Ugric identity will be considered briefly.

Keywords:

TH1-01  Abstract 10

Toward an Archaeo-Omnithology of the Bering Sea Region

Author: Prof. Hill, Erica, University of Alaska Southeast, Juneau, United States of America (Presenting author)
Keywords: Bering Sea, birds, human-animal relations

Presentation Preference: Oral

Archaeological evidence from the Bering Sea region of the North Pacific indicates that prehistoric human inhabitants possessed a broad and sophisticated knowledge of birds and their behaviors. Reconstructing human relations with birds requires integration of multiple lines of evidence, including imagery, narrative, and human and animal remains. In this presentation, I discuss the archaeological evidence that humans attempted to mimic or acquire the abilities and physical attributes of some bird taxa, such as lions (leaves) and shorebirds. Human burials as early as the Adak period (c. 400 CE), caches, masks, amulets, and ethnohistoric narratives indicate that select bird taxa mediated the human experience of coastal environments.

Keywords:

TH1-01  Abstract 11

Wild birds in medieval Italy: an investigation of their roles in diet, environment and society

Author: Dr. Albarella, Umberto, University of Sheffield, Sheffield, United Kingdom (Presenting author)
Keywords: medieval Italy, wild birds, zooarchaeology

Presentation Preference: Oral

Wild birds are intrinsically associated with our perception of the Middle Ages. They often feature in heraldic designs, paintings, and books of hours; few human activities typify the medieval period as much as falconry. Almost obsessively portrayed in the famous Bayeux tapestry (celebrating the Norman victory at the Battle of Hastings) falconry has an especially prominent role in the Italian Middle Ages, not in small part due to the famous book by the Emperor Frederick II, which remains an important source of information on the subject. Prominent in medieval iconography, wild birds feature less frequently in written sources (as they were rarely a subject of trade transactions or legal documents) but they can be abundant in archaeological contexts. This paper is somewhat underexplored and this paper aims to contribute filling this knowledge gap by highlighting the nature of wild bird exploitation in Italian medieval societies, ranging from their role as food items to their ritual, status and symbolic importance. A survey of about 20 Italian medieval sites, dated from the 5th to the 15th centuries, reveals the occurrence of more than 100 species (certainly an underestimate of the real original number). Considerations on the habitats and behaviours of the identified bird species, coupled with parallel information from historical sources, help our understanding of the role they played in medieval societies. Though some species were almost certainly hunted for food, as revealed by butchery marks on bones, others were more likely to have produced feathers or acted as hunting companions and status symbols. The paper will also contrast urban and rural evidence and investigate any apparent diachronic change.

Keywords:

TH1-01  Abstract 12

Avian-Human Interactions in North Atlantic Island Environments: Modes & meanings of bird capture

Author: Dr. Beat, Julia, Bournemouth University, Poole, United Kingdom (Presenting author)
Keywords: Avian Archaeology, Islands, Seabirds

Presentation Preference: Oral

Birds were a small but often important component of diet and economy in the past, particularly in islands, as a diverse range of birds, especially aquatic birds, thrive in coastal and island locations. Large colonies of gregariously breeding seabirds would have provided past populations of these locations with a concentrated resource base that could be targeted intensively or sporadically for meat, eggs, oil and fat. Bird use in the North Atlantic Islands is therefore integral to fully understanding diet, and resource use in these settings. This paper presents results from a large-scale investigation of Mezo/ lithic to Post-Medieval bird use in the North Atlantic Islands that involved collecting pre-existing avian data and combining it with new, in-depth analyses. The archaeological dataset is considered alongside modern species profiles, and contextualised within the wider historically documented tradition of fishing. The zooarchaeological dataset illustrated that whilst many birds were sourced locally, others required specific fishing trips to more distant areas of the landscape. Several key species exploited through time and space (such as gannet and guillemot) would have been acquired from dangerous areas of terrain such as cliff-faces. These targeted avian species demonstrate that fishing was part of a wider picture of mobility and interconnectivity in marine resource use that involved moving around the seascape and to different island landscapes. Changes are seen in the exploitation of locally sourced taxa resulting from preference, seasonality, and species populations (including sustainability issues as evidenced in the great auk’s decline and extinction). The creation of unique fishing profiles responding to specific needs (e.g. netting of waders in winter to supplement the diet) indicates a degree of lyminality in these landscapes. Historically documented case studies such as the fowlers of St Kilda characterise the duality of isolation and connection in avian-human resource networks.

Keywords:

TH1-01  Abstract 13

Beyond the bones: a multi-strand approach to past perceptions of avian associations

Author: Pitt, Jacqueline, Bournemouth University, Bournemouth, United Kingdom (Presenting author)
Keywords: Avian-Archaeology, Material culture, Zooarchaeology

Presentation Preference: Oral

Birds form an important part of human society, culture and subsistence both now and in the past. Combining analysis of faunal remains and material culture at archaeological sites, this paper examines attitudes towards birds between the Bronze Age...
Changes in goose and duck use from the early Roman period until the post-medieval period in Britain

Author: Poland, Gerd, The University of Sheffield, Sheffield, United Kingdom (Presenting author)
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Keywords: Britain, Duck, Goose

Presentation Preference: Oral

Geese and ducks have been used in Britain from late prehistory until the present day for a multitude of reasons including for their meat, their eggs, their feathers, and their fat. We know from historical sources that the economic and cultural significance of these animals has changed over time, but archeology provides a unique perspective on this phenomenon. The question addressed here is how the use of these birds has been changing over time, and what this can tell us about Late Antiquity and the medieval period in Britain.

Bird bones are normally recovered in the sites, sometimes as waste from daily life and other times as result of ritual actions. This has prevented some key questions from being addressed satisfactorily, such as when the husbandry of the domestic forms became more common than wild fowling, when selective breeding started to occur, and when these animals started being exploited for very specific economic and cultural reasons.

This paper discusses the changing use of these birds from the early Roman period until the post-medieval period in Britain by comparing zooarchaeological assemblages from several sites, including a range of different site types and geographical locations. Key changes in the use of these birds will be discussed using four main proxies: differences in taxa frequencies, the relative frequency of immature bones, variation in butchery practice, and changes in size through time. Taxon identification was achieved using recently developed morphometric criteria at the University of Sheffield. This paper was possible due to combining results from two post-doctoral projects and one PhD project at the University of Sheffield.

Food for the Dead or Symbol of Rebirth?
Culinary offerings and incubated eggs from a Roman cemetery

Author: Sichert, Benjamin, Universities of Basel (Switzerland) and Freiburg (Germany) (Presenting author)

Keywords: antiquity, archaeozoology, eggshell

Presentation Preference: Oral

The late Roman site of Ober-Olm provides a fascinating example of unusually rich food offerings in a funerary context. Alongside the deceased the remains of entire meals could be recovered, often still on plates and in bowls. Although it is unknown for whom these meals were intended – the dead or other abstract beings – archaeologists gained insight into their selection and preparation but also their presentation to the community attending the funeral.

Yet, not all faunal remains could be interpreted that easily as food. This was particularly the case for two goose eggs found in a woman’s grave. Because it was assumed that the egg’s function is closely connected to the state in which they were placed inside the burial - originally fresh eggs rather served as meal, incubated remains possibly had a symbolic, eg. (re)birth related significance - they were more closely analyzed. Slight differences of an eggshell’s microstructure can provide evidence of its potentially incubated state. These modifications result from the avian embryo resorbing calcium from the shell to form its skeleton. However, although the recovered eggs of Ober-Olm showed signs that could indicate incubation, these alterations were not uniform for all samples. A distinctive pattern of incubated and not-incubated spots. This could possibly have a taphonomic origin. It is for this reason that we are now conducting experiments with unfertilized eggs. Due to better excavation techniques eggshells is also increasingly discovered on other archaeological sites. A deeper understanding of the taphonomic processes influencing their microstructure is vitally important in order to distinguish between the shells of hatched and eggs that served as food.

Birds: bones & images in Iberian Culture 6th-2nd cent BC
use & symbolism in East Iberian Peninsula

Author: Dr. Isorna, Maria Paz; IVOR CulturaXtend Generalitat, Valencia, Spain (Presenting author)

Keywords: birds, bone figures, symbolic role

Presentation Preference: Poster

The term Iberian Culture, is used to define the group of people who inhabited the eastern strip of the Iberian Peninsula roughly between 6th-2nd century BC. Iberian society was highly urbanised and socially stratified (Bonet and Mata 2009; Ruiz 2000; 2003; Ruiz and Molinos 1993). The society was still predominantly agrarian, with agriculture and livestock husbandry constituting the basis for subsistence. However, the area was already incorporated in the Mediterranean trading routes in order to participate in these trading networks mainly with Phoenicians and Greeks (Bonet and Mata 2009; Sammarti 2009). This world was structured into a variety of territories characterised by a complex pattern of hierarchical settlement. The main population nucleus was the oppidum, a large site of around 10-15 hectares and the capital of the political area. The other settlements were smaller, and, depending on their size, are categorised as small towns, hamlets, farmsteads, hillforts or military establishments. Ritual sites, main sanctuaries and cemeteries, have also been found (Grau 2002; Ruiz 1996; 2000; Vives Fernandez 2013).

Bird bones are normally recovered in the sites, sometimes as waste from daily life and other times as result of ritual actions. In this last case birds go with human remains inside urns and pits such as domestic or funerary offerings. The identified species are; chicken (Gallus gallus domesticus), partridge (Alectoris rufa), golden eagle (Aquila chrysaetos), mallard (Anas platymycon), little bustard (Tetrax tetrax), penguin (Columba livia), little owl (Athene noctua), barn owl (Tyto alba), Eagle owl (Bubo bubo), white stork (Ciconia ciconia), gull (Larus sp.) and Cory’s shearwater (Calonectris diomedea). Some birds are hunted and the bones used to create musical instruments (Iborna 2004; Iborna and Pérez Jordà 2013; Iborna, 2016; Casado, 1994).

Bird pictures (figures) are usually represented on ceramic vessels, where they appear in different types of scenes. Scenes of hunting, war, funerary and domestic life. Although they can also be find others materials such as ceramic, sculpture and metal craft.

To what extent are birds important in Roman gardens?

Author: Mgr. Unamová, Valéria, Institute for Classical Archaeology, Prague, Czech Republic (Presenting author)

Keywords: birds, Roman garden, aviary, mosaic, fresco

Presentation Preference: Poster

Viewing various species of birds, especially the peacock, peahen, guinea fowl, partridge, duck, is a frequent motif on floor mosaics with a garden theme in the Roman world. There are also wall frescoes depicting gardens full of birds for example from Livia’s house at Prima Porta near Rome from the 1st century AD and from a house at Verum (today’s Zollfeld) in the Roman province of Noricum from the 2nd century AD. But does it reﬂect keeping birds in garden itself? On some particular sites are remains of architectural structures reckoned as aviaries, which will be displayed on example from the Roman province of Gaul on Máni-Véñen site from the 3rd century AD and for further comparison those from Maison de Valérés in Carthage in province of North Africa from the beginning of the 3rd century AD. Either many types of cages are painted on garden frescoes or it is possible to rely on literary sources as well. Thus the iconographic sources represent a graphic image transmission of an aviary or a hunting park, in analogy to the mosaic in North Africa, which belonged to the villa and which is otherwise difﬁcult to prove. It may also represent an acapsum, hunting wild birds within venalia/munera, which is mentioned in Palladius’ work. Similarly in this way it is also reﬂected a higher social status of the villa owner. Based on literary, iconographic and archaeological sources it is obvious that birds were kept in Roman gardens for pleasure or some use. The meaning of bird’s presence in focus amoures is still not sufﬁciently clariﬁed.
PETRIFICATION PROCESSES IN (PRE-)HISTORY

Thursday, 1 September 2016, 14:00-18:30
Faculty of Philosophy, Room 201

Author: Hueglin, Sophie, Newcastle University, Newcastle upon Tyne, United Kingdom (Presenting author)
Co-author(s): Gramsch, Alexander, Roemisch-Germanische Kommission, Frankfurt a Main, Germany

Keywords: Hierarchisation, Petrification, Standardisation

Presentation Preference - Regular session

Processes of consolidation and structuring – in nature or in culture, in space or in time – which lead to something more permanent, trans-generational or even ‘eternal’ can be called petrification. This can be observed in material culture when more durable, heavier, and inorganic materials are used, but also in societies when social relations become more stable, hierarchical and predefined. For this session we suggest studying petrification processes in different spheres of material culture as well as in human interaction. The change from wood to stone in architecture and the replacement of organic containers by ceramic vessels could indicate a more sedentary and consolidated lifestyle. A standardisation of shapes, the development of a ‘classic style’, and the harmonisation of ritual and feasting practices can be an attempt to unify belief systems and social structures.

However, what if the change occurs only in, for example, grave architecture or affects economic structures without a matching transformation in social structure? Is inconsistency and discrepancy in such processes what Clifford Geertz called the ‘style’, and the harmonisation of ritual and feasting practices can be an attempt to unify belief systems and social structures.

We would like to invite speakers to investigate across all periods how processes of consolidation or petrification occur and whether parallel developments can be observed: in the natural environment in different spheres of material culture and in aspects of social relations and practices.

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TH1-02 Abstract 01
Petrification: a concrete comprehensive diachronic concept for past process comparison

Author: Dr. Hueglin, Sophie, Newcastle University, Basel, Switzerland (Presenting author)

Keywords: early medieval stone building, materialism, theory

Presentation Preference - Oral

The moment we want to describe, quantify and compare processes over large distances, from different periods and in diverse material cultures, we need concept- and context concepts. To do this in a highly materialistic subject like Archaeology, a concept will have to be as concrete and measurable as possible. At the same time, it must be transferable to the intangible as well as to the – in our conception – magical minds of the people we study. Such a seemingly simple concept is petrification. Apart from its obviously Christian roots (Apostle Petrus) it describes increasing durability, weight and regularity in objects and processes.

My personal approach to petrification comes from the study of the reintroduction of stone architecture in the medieval period. This – according to M. Shapland – conscious choice of stone over wood as building material especially for churches, town walls and funerary monuments it is connected with other phenomena like the attempt to normalise calendars, the transition from oral to written in communication – e.g. the production of books and especially of historio- and hagiography in the Roman tradition.

The introduction of Rome-centred Christianity probably also led to deforestation, parcelling of the land and hierarchisation of society which all can be described as processes of petrification.

Petrification leads not only to physical boundaries in the landscape, but also to differentiation of concepts in our minds. Essentially, how we divide the past into distinctive periods is a result of this separation process. In our conception and description of the past we seem ‘petrified’ because phases of petrification can be perceived more easily and thus tend to be overestimated. A diachronic classification like this – attempting to ignore the barriers between epochs and to a certain extent time itself – will at the same time be a chance and a challenge. Petrification offers a concept with which we can observe, describe and compare processes without judging them emotionally or morally. The opposite concept of petrification could be called ‘equilibration’. It will be the topic of a follow-up session.

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TH1-02 Abstract 02
Liquid time, petrified objects. Concepts of historical change in archaeology

Author: Dr. Gramsch, Alexander, German Archaeological Institute, Frankfurt a. M., Germany (Presenting author)

Keywords: material culture, petrification, transmigration

Presentation Preference - Oral

While we as session organisers are far from agreeing upon what ‘Petrification’ means, we were trying to circumscribe it with terms such as ‘consolidation’, ‘stabilisation’ and ‘classic style’, referring to changes both in societies and material culture. That said, we know that notions of stability, consolidation and steadiness are deeply linked to our understanding of both time and material culture. So this introductory talk addresses notions of time, change and material culture in archaeology: From traditional culture-historical archaeology to post-processualism and from spatial to cultural and other turns to current scientifically driven archaeology we as archaeologists need to connect the material culture we study to notions of transformation and development.

How do we conceptualise periods of stability or ‘equilibrium’ vs. periods of change or break-up? How do we conceptualise periods at all? Which conceptual steps do we take to infer the petrification of a society from the archaeological record? Do we perceive petrification as one instant in a succession of distinct instants or as a process within a process?

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TH1-02 Abstract 03
When did eternity end? The so called downfall of Linear Pottery culture

Author: Dr. Bickmann, Eric, Köln/Cologne, Germany (Presenting author)

The Early Neolithic ‘Linear Pottery Culture’ (LBC) could be called a ‘petrified’ society. For at least 30-50 generations, it prevailed over wide parts of Europe. Its ‘classic style’ describes a uniform pottery decoration. Moreover, also standardisation of the house shapes, stone tool traditions and probably also ritual practices unified this culture. While ceramic decoration styles changed, many other aspects survived into the so-called ‘Middle-Neolithic’ period. This lecture wants to address the question, if changes in one only aspect of material life should really serve as evidence for the end of a social system and lifestyle community.

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TH1-02 Abstract 04
‘Petrified’ societies? An Egyptianological survey

Author: Dr. Wasmuth, Melanie, CH-Basel University, Rheinfelden, Germany (Presenting author)

Ancient Egypt is renowned for its monumental pyramids, temples, and tombs as well as the stability of its kingship concepts, and the continuity of artistic display. Though perishable materials and transient traits are studied as well, stone features and long-term standards remain the major attraction in antiquity as well as today. Ancient Egypt therefore provides an exemplary case to study the potential of the concept of petrification: It not only stresses the need to differentiate between active and passive petrification, but also of a direct – i.e. building for eternity in stone – vs. a more figurative meaning of the concept: the ‘petrification’ of ancient concepts and techniques to promote their perdurability. In addition, the approach encourages the question to which extent this undeniably inherent characteristic is only one side of ancient Egyptian society and its cultural output. It strongly highlights the discrepancy between contexts aiming at imperishability and others in which the concept is irrelevant or perhaps even revoked: even for the royal sphere, every-day life in ancient Egypt has to be reconstructed to a large extent from sacral and funeral sources. This is due to lack of preservation or the deliberate usage of unenduring materials for finite aspects of life.

The approach has a further dimension when applied to past research: To which extent do the preserved ‘petrified’ monuments and social concepts trigger a stereotypes academic approach to ancient Egyptian societies and their remains? The contribution will present a selection of sources exemplifying these issues.

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TH1-02 Abstract 05
The hardness and the eternal: petrification of human images and social contradiction

Author: Dr. Marina Galliano, Marina, Rome, Italy (Presenting author)
Co-author(s): Vanzetti, Alessandro, University of Rome “La Sapienza”, Rome, Italy

Keywords: Human figurines, Society, Trans-Mediterranean perspective

Presentation Preference - Oral

The formalisation of human images as figurines can be seen as a relevant act of self-representation, reflecting an idea of the human being and possibly of the sacred. In fact, as we may be experiencing even today, iconoclastic attitudes are important in allowing, or denying, space for peculiar representations, and the human image is a core problem in that sense. Anyway, when we can observe human representation to take place, we can easily recognize differences in materials implied, and in the size and context of the representation.
The quantitative analysis of the observable materials can suggest different attention was played in setting figures in connection with concepts like durability and social transmission of messages. Anyway, other formation processes of the archaeological record are relevant, too: factors of preservation of different materials should bring more caution in evaluating presence/absence of less durable materials as used in the production of figurines and statues. The use of different materials can also undermine different strategies of dissemination of information, of its personal use and of “democratization” of the impact of the underlying message. The case can be raised of contradictions in the social context of message transmission.

The theoretical situation and a model of analysis will be explained through cases involving a trans-Mediterranean perspective (i.e. both in Africa and in the Near East and in Mediterranean Europe), during the Neolithic and up to the Bronze Age.

Keywords: Tracing “petrification” in prehistoric architectural processes

Title: The temporality of stone: communities and early sculptural traditions in late prehistoric Iberia

Author: Dr. Díaz-Quintanilla Urria, María, University of Southampton, Southampton, United Kingdom (Presenting author)

Presentation Preference: Oral

Stone is regarded as ‘external’ in many cultures, past and present, across the globe. It appears to be frequently linked to monumentality and ancestor worship, phenomena that are seemingly universal. When investigating stone in the context of human-related events and processes, its durability instantly turns into a central issue in the articulation of social, cultural, and historical narratives. In this context, stone is considered to play a key role in the so-called ‘petrification’ or ‘lithification’ of social structures and institutions. Indeed, if compared to human temporality, stone has the potential to work across much longer-lasting temporal frames. However, while stone persists it is not eternal neither static nor stable. Stones are in constant flux. They transform as they interact with a broad variety of agents, from air, water, and acids, to living organisms, including microorganisms, animals, or people. And as they interact, stones engage in the crafting of complex meshes of social relationships with varying temporalities (and spatialities).

This paper seeks to explore the temporality of stone and its role in the late prehistoric communities of western Iberia through the analysis of their sculptural traditions. Western Iberia is home to an extraordinary collection of stone stelae and statue-menhirs that were placed in the landscape and represent life-size human bodies decorated with weapons and elements of dress and adornment.

Much attention has been given to the classification and cultural affiliation of stelae and statue-menhirs based on their iconographies. Less attention, however, has been put on the very nature of these stones as monuments, on their persistence and the role of this property in the fashioning of iconographic standardization, the long-term crafting of these sculptural traditions and, ultimately, the social reproduction of the communities associated with them. This paper will address these issues while also taking into account the variability and constant changeability of these stones, their workings within short-term temporalities and the fluidity of form and, ultimately, the social reproduction of the communities associated with them.

Keywords: Genes, Migrations and Language Dispersals: Re-theorizing mobility and the formation of culture and language among the Corded Ware Cultures in Europe

Author: Prof. Kristian Hansen, Kristian, University of Gothenburg, Göteborg, Sweden (Presenting author)

Presentation Preference: Oral

We are now finally in a position where migrations can be documented rather than debated. This has lifted an interpretative burden from archaeology, in much the same way as C14 dating did when it was introduced. The new freedom can instead be invested in properly theorizing and interpreting local processes of migration, integration and assimilation, which has been an underdeveloped field of research. By integrating recent results from archaeology, isotopic tracing and historical linguistics this will in turn allow us to formulate better-founded models for the interaction of intra- and settling groups, the formation of a new material culture, and consequently also for language dispersals and language change. In this paper I forward a theoretical model that accounts for the formation of Corded Ware cultures as a result of local adaptations and interaction of migrant Nenets populations with still existing Neolithic cultures.

Keywords: Prehistoric dry-stone structures at high-altitude in the Alps: social, economic and cultural drivers

Author: Dr. Carrer, Francesco, Newcastle University, Newcastle upon Tyne, United Kingdom (Presenting author)

Co-author(s): Walsh, Kevin, University of York, York, United Kingdom Co-author(s): Raimler, Thomas, Archaeological Service of the Canton of Grisons, Chur, Switzerland

Keywords: Alpine pastoralism, Bronze & Iron Age, Dry-stone structures

Presentation Preference: Oral

Pastoralism is a long-lasting strategy of human-environment interaction at high-altitude. In the alpine arc, in particular, the upland landscapes >1600 m a.s.l. have been shaped by pastoral activities since the Neolithic. Pastoral groups have contributed to the modification of plant communities of the high-altitude environments, and they also created different types of seasonal landscapes. The most effective assessment of the alpine landscape integrates the study of these pastoral structures within an environmental framework comprising woodlands, pastures, streams and peaks. Huts are exploited by the herders for different types of activities, corrals and byres are used to stable the animals, and cellars for cheese-making. Most of these structures are made of stone or timber posts leaning on a stone basement. Recent archaeological projects shed new light on human colonisation or exploitation of high-altitudes, showing that the earliest dry-stone structures (tentatively related to pastoralism) occurred in the alpine pastures since the late third millennium BC, and became common throughout the Alps during the second and first millennium BC. Interestingly enough, the appearance of these structures do not correspond to the first evidence of pastoral

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activity in the alpine uplands (suggested mainly by palaeoenvironmental proxy data), as if the earliest pastoral groups exploited much more ephemeral shelters. This observation opens a series of interpretative questions: What triggered the construction of these permanent structures during the Bronze and Iron Age? Was it just for functional reasons or was it also a way to facilitate ‘possession’ of this ‘marginal’ environments?

In this paper the origin of dry-stone pastoral structures in the Alps will be investigated. The available archaeological data will be revised, to assess the chronology of their diffusion and to find structural similarities that might mirror functional and cultural aspects. Insights from recent ethnoarchaeological investigations will enable the role of these structures within the upland landscapes to be inferred.

TH1-02 Abstract 11
Set in stone? The Influence of Petrifaction on Mediterranean Urbanism (c. 700-300 BCE)

Author: Dr. Maschek, Dominik, Department of Classics, Ancient History & Archaeology, University of Birmingham, Birmingham, United Kingdom (Presenting author)

Keywords: archaeology of urban centres, Greek colonisation, urbanism

Presentation Preference: Oral

Research on pre-modern cities has mainly focused on two aspects of the ancient Greek polis: on the one hand, the polis has been seen as the substrate for urban culture based on a politically active class of citizens. On the other hand, many scholars have emphasized the 'straight' qualities of ancient Greek cities: in this view, the 'petrified' shapes of public buildings and meeting places have been taken as direct indicators for social and cultural ideas. However, recent approaches in urban studies, sociology and classical studies tend to contradict such a straightforward separation between materiality and semantics of ancient cities. First of all, the meaning of public urban spaces as well as their basic definition and ideal-typical description were constantly changing both in time and due to human agency. Urban designs which were theoretically conceptualized for future generations could be fundamentally transformed by changing courses of real-life-cycles, losing their historical eminence in the process. Especially in the Greek colonies throughout the central Mediterranean, processes of petrifaction played an important role in the formation of urban communities. Archaeological evidence allows for the conceptualization of petrifaction as combining both resource management and social negotiation amongst the inhabitants of newly defined urban centres. Furthermore, our written sources need to be put into perspective using the results of archaeological investigations. Literary descriptions from the 5th century BCE onwards stand against ample archaeological evidence for a high degree of regional diversity in both centre and periphery of the Greek world. The present paper thus aims at comparing the different sets of sources and their respective interpretative potential. In a second step, the concept of public space in Greek cities shall tentatively be defined by looking at discontinuities and interactions between ‘petrified’ urban fabric, social space and normative discourses.

TH1-03 Abstract 01
Medieval Play and Archaeology: an Introduction and a Challenge

Author: Dr. Williamsen, Annemarie, National Museum of Antiquities, Leiden, Netherlands (Presenting author)

Keywords: material culture, mobility, play

Presentation Preference: Oral

Medieval Play and Archaeology: an Introduction and a Challenge Before looking at archaeological remains of play, we need to try and understand what that concept meant to a medieval person. In his ‘Homo ludens’, Huizinga defined play as a free act, intentionally outside ordinary life, without direct material profit, within a distinct time and space, orderly to certain rules, and creating communal ties. People can play in sober earnest - like children, footballers and chess players - but still know well they are playing and that it is not the real world.

Following this, we should be looking at a large variety of medieval ‘playful’ activities. Until recently, the archaeology of medieval play has been largely limited to the recognizable material remains of board games, and children’s toys, while specific designated areas for play have been touched upon as part of excavated buildings or landscapes. The way forward may be, in the wake of Huizinga, to see play and its material dimension less as an isolated outside category and more as a fixed part of most medieval activities.

This paper can provide a historiographical and theoretical background to the session ‘Homo ludens medievalis’.

TH1-03 Abstract 02
Playing the Heroic Hunter: The Role of Play in the Design and Utilization of Medieval British Parks

Author: Dr. Mainly, Kevin, University of Wyoming, Saint Paul, United States of America (Presenting author)

Keywords: Nature, Play, Performance, Scotland, Parks, Medieval

Presentation Preference: Oral

Medieval British park landscapes are often discussed in terms of aristocratic leisure and the prestige associated with ownership and use of such impressive feats of monumental architecture. As hunting grounds, these enclosures offered social venues for
royals and noblemen to participate in performance and play, providing arenas where heroic fantasies could be fulfilled in gaudy fashion. By combining archaeological, historical, and environmental evidence this study explores how play and performance influenced medieval park design, function, and meaning, and ultimately shaped the landscape during the Middle Ages. This work argues that the intricate designs and organizations of parks through the incorporation of dramatic topography and managed natural resources, like wood, represent the medieval perception of an idealized nature. Furthermore, by hunting often volatile animal species, providing opportunities for hunting quizzes to escape, performing such displays in front of crowds, and designing a “natural” habitat contributed to a more exhilarating and realistic experience to an otherwise pacified form of hunting. Thus, the theatrical hunting displays carried out within park confines is representative of an effective form of medieval play that centered around theymbolism of domination over nature, war, and the mythic hero, subsequently reinforcing signals of power.

TH1-03 Abstract 03

Londoners at play: an archaeological exploration of Medieval and early modern bear-baiting

Author - Dr. O'Regan, Hannah, University of Nottingham, Nottingham, United Kingdom (Presenting author)

Keywords: bear-baiting, blood sports, London

Presentation Preference - Oral

Animals were an integral part of entertainment and play for many people in the Medieval and post-Medieval periods. In England bear-baiting had royal approval, and on special occasions the monarchs and their guests would view baithings at a variety of venues in London and at their Royal Palaces. Purpose-built bear-baiting arenas were erected on the south bank of the Thames to accommodate spectators from all levels of society, and it appears that the costs of attending a baiting were the same as those for the theatre. There has been extensive literary research on references to bears in Shakespeare's plays and discussions of whether or not live bears were ever on stage in London, but there has been much less interest in bear-baiting. The bears used in the baithings were valuable animals, and some were even named (e.g. George Stone), so going to a baiting may have been akin to seeing a favourite actor on stage. How did such entertainments work and what is the evidence for bear-baiting in London? Drawing on documentary records as well as archaeological information on the bear-baiting structures, bear-themed material culture, and the remains of the dogs and bears themselves, I will explore what this type of play tells us about Medieval and early-modern London.

TH1-03 Abstract 04

King Louis XIII's real tennis court at Versailles

Author - Dufour, Jean-Yves, INRAP, Villamoborde, France (Presenting author)

Keywords: game, tennis court, Versailles

Presentation Preference - Oral

This paper gives an account of some of the archaeological discoveries made in the courtyard of the Great Commons of the chateau, where the King's real tennis court (jou de paume) was excavated. The architectural project was the work of Philibert Le Roy, architect to the King. Architectural features of Louis XIII's tennis court are described, and compared with textual data. Three of the four inner walls are bounded by covered galleries for public enjoying the game. The shape given to the room for the court paume game has allowed historians to propose two hypotheses for the mediaeval origins of the game. It may have originated in the cloisters of monasteries or in the streets. The change in the flooring of the real tennis court, terracotta and stone paving first, then stone paving only from 1639 onwards, gives some information on the way the points were scored. The ancillary structures associated with the tennis court are a water cistern, latrines and the house of the maître paumier or games master, an artisan who managed and maintained the court and acted as an umpire for the game. He also made balls and rackets. This changing room was also used for rest and refreshments, to play dice.

What was the place of real tennis in medieval and modern society? The exercise of power has its' implications: for the body. It must be robust. The games of the Middle Ages were rough with hard physical contact: wrestling, soule, hockey, jousta and tournaments still fit contemporary popular imagery. Tennis is the first such game to be developed which does not involve direct contact with the opponent. In 1596, Francesco Gregory d'Ierni observed in Paris, two hundred and fifty fine and well furnished tennis courts, which . . . give livelihood to some seven thousand people: guardians, masters of games, linesmen, racket makers, . . . . This was indeed the golden age for the game. Playing tennis requires dexterity, strength and reflection, even strategy, all qualities which are required of a prince. By bringing out the qualities of a player, by allowing a privileged moment of interaction between those who play, tennis is also an art of the Court. Under Louis XIII, tennis was considered as an art by the puritans and as a game by the populace, but not yet as a sport.

TH1-03 Abstract 05

Ludic space in the late Middle Ages cities on the south Baltic coast

Author - Dr. Romanowicz, Paulina, Center for Medieval Archaeology of the Baltic Region IAE PAS, Szczecin, Poland (Presenting author)

Keywords: amusement, space, toys

Presentation Preference - Oral

There are no any written sources left that could tell us anything about how and where people living in the cities situated on the south Baltic coast used their so called free time. Archaeological sources rarely found in these places are the only evidence of the amusement present there. The aim of this paper is to present the model of the ludic space in those cities constructed on the basis of archaeological finds of toys and play accessories. There is visible difference on how was treated public and private space, so this will be the main categories used in this model.

TH1-03 Abstract 06

Whose game is it anyway? Mobility, cultural transfer and board games

Author - Hall, Mark, Comharke na Eilean Siar, Isle of Benbecula, United Kingdom (Presenting author)

Keywords: cultural transfer, mobility, play

Presentation Preference - Oral

This paper will explore board games as a facet of play in the context of mobility, mobility at both the micro (on the board) and the macro (within and across cultures) scales. Here that mobility is characterised not as diffusionism but as the complex cultural interaction between and across societies and cultures, exploiting trade, military conquest, gift giving and religion and ritual as avenues of exchange and interaction.

Considering board games within the framework of mobility raises some key issues around their social significance: how and why did they spread? Movement is, of course, essential to games (as it is to play) both for the games to work - they are at the core of the ‘capacity to move’ that is the definition of its mobility in its Latin origin - and for them to spread across cultures and between peoples. Like other forms of play they allow the individual to perceive their existence through performance, combining physical, sensory reactions with mental agility and strategic thinking. At their most successful they can produce a feeling of flow. Reflexively they allow an escape from the world as a means of re-defining it (including re-locating the individual within it). Board games speak to the mobility of people - physically, intellectually and spiritually. They help to reify and crystallise rituals and social orders whilst at the same time opening up a space for encounters that might change things. They are both of this world and allow movement away from it or the making of new worlds. Board games are both structured by and structure mobility. The next move is yours!
TH1-03 Abstract 09
Early medieval Sandomierz Chess Set: contemporaneity of old and new excavations results

Author - master Stempin, Agnieszka, Poznań Archaeological Museum, Poznań, Poland (Presenting author)

Keywords: Archaeology, Games, Chess, Objects

Presentation Preference  - Oral

The chess defined as „Sandomierskie“ were unearthed on the stand no 7 in Sandomierz on the old Town Hill. According to the tradition passed over by Jan Długosz (polish chronicler: 1415-1480), this place is considered to be the oldest part of this town. From the year 1958 on through the period of 10 consecutive years systematic archeological works were carried out on some other parts of the Hill. On October 9, 1962 in the south-western corner of the homestead some unique find was uncovered, namely, an almost complete set of chess with only three pawns missing, made of antlers in the Arabic style, now known as “The Chess of Sandomierz”. This definately not only one of the most interesting discoveries of the Early Middle Ages chess pieces on the territory of Poland but also one of the most interesting ones on the territory of the Early Middle Ages Europe. The area was then examined, not widened due to the requirement of finishing the works, allowed to determine the place of the discovery as a small, modest half unrug. In the material gathered at that time the chess figures were the only such spectacular finds, others being ceramics from the 12th century.

Such a picture of the circumstances of finding The Chess of Sandomierz was dominating in the professional literature for long years constituting a source of many hypotheses and speculations on the reasons of finding the figures on such an unexpected site. The hut being the only dwelling place in this area did not belong to any settlement and was a phenomenon of its own difficult to be interpreted. It was supposed to be a poor half unrug of a small size in which two almost complete sets of chess figures from the Early Middle Ages were found. For over half a century the site of discovering the chess was not researched archeologically. Undertaking the verifying works in the year 2014 was connected with the willingness to recognize a wider scope of the problem of chronology and the space relations of the stand no 7 and to determine the context of the appearance of the Chess of Sandomierz in this area. During the two research seasons (2014-2015) many artefacts connected with the elite culture were registered within the area the hut occupied. The exclusive character of the items uncovered both in the hut with the chess and its neighbourhood seems to confirm the above mentioned interpretation of this context. The occurrences like a manor house rather than an ordinary dwelling place. The discovery of a vast homestead or a manor house which was burnt down around the mid-13th century and which might have been the seat of the local elite was very surprising. This offers a new opportunity of interpreting the mysterious presence of The Chess of Sandomierz in this place.

TH1-03 Abstract 10
Medieval game pieces with a square base from Central Europe – interpretations

Author - Włodzio, Ewa, Inowrocław, Poland (Presenting author)

Keywords: board games, game pieces, medieval games

Presentation Preference  - Poster

Game pieces in the shape of a low pyramid with a square or almost square base, with surfaces often ornamented or marked with punched or drilled dots and incised lines, are found in numerous archaeological sites in Central Europe. These small objects, made mostly of bone, are dated between the 12th and 19th centuries and are generally identified as board game pieces, but it’s unknown how exactly and in which types of games they were used. The following poster presents new interpretations of their function based on their material properties, but also on their archaeological context and on the current knowledge about medieval games.

TH1-04 Abstract 01
Close encounters. Setting a new research agenda to understand migration beyond explanatory models

Author - PhD Revello Lami, Martina, University of Amsterdam, Amsterdam, Netherlands (Presenting author)

Co-author(s) - Dr. Acconcia, Valeria, Università G. d’Annunzio di Chieti-Pescara, Chieti, Italy

Co-author(s) - Dr. Gori, Maja, University of Heidelberg, Heidelberg, Germany

Keywords: Ethnicity, Migration, Mobility

Presentation Preference  - Oral

Although studies on mobility have been the focus of greater attention in archaeology over the past 150 years, they evolved in constant tension with those emphasising the notion of indigenous evolution. Consequently, the long-standing debates between ‘immobilist criticism’ and migration-driven theory inevitably affected the ways of thinking about the role of migration in the past, preventing the discipline from developing more elaborate interpretative frameworks. Moreover, such an approach to migration has not kept pace with the ever-growing and ever more sophisticated data produced by the innovative analytical tools commonly applied to archaeological research, which cannot be convincingly understood by applying polarising explanatory models. Clearly, investigating the archaeological record only to substantiate opposing arguments in favour or against migration is fundamentally misleading, and greatly reduces the potential of studying any populations’ movement.

In this paper, we argue in favour of a more open notion of mobility, which needs to be considered as a dynamic process and not only as a vector of material change. Migrations may be large-scale phenomena, taking place independently from local or individual agency, as well as more subtle types of demographic, taking place on a small-scale and depending on individual agency. Likewise, the traces left behind by people on the move need to be addressed by combining different disciplines and analytical methods. The shift from generalising models to a multi-scalar notion of mobility brings on the table new questions and a new research agenda. By gathering a wide array of case studies, crossing
Interpreting the Archaeological Record

TH1-04 Abstract 02
Changing world changing creativity?

Human mobility dynamics and late Paleolithic handicrafts

Author - Iovino, Maria Rosa, Istituto Italiano Paleontologia Umana, Rome, Italy (Presenting author)
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Keywords: material imagination, mobility dynamics, traditions

Presentation Preference - Oral

In Italy, the peninsula as well as nearby islands, is a very peculiar area where to carry out research on past and also recent human migration events.

By interdisciplinary analysis on engraved and painted signs on stones of sites from Italy, we try to reconsider people movement and human-environment interaction around 12,000-10,000 BP. The analysis of decorative technologies (e.g.: engraving, pitting, piercing, painting, sticking) helps to understand, and to trace styles/traditions, methods and ability, the analysis of mineral and of organic materials used as decorative medium help to explore, and to trace substance provenience and to better focus in what is a "local" tradition about the use of a substance and what is not.

In this paper, we mainly focus on sites from southern Italy (Puglia, Calabria and Sicily) in comparison with other sites from Italian territory and from wider Mediterranean and Alpine contexts, to discuss the insight of human creativity and perception and to evaluate human mobility dynamics in relationship with their potential original ethnicity, the raising of new creativity and the ways of making material imagination.

TH1-04 Abstract 03
Migration or Acculturation? The Mesolithic-Neolithic conundrum

Author - Templer, Michael, Neuchâtel University, Enges, Switzerland (Presenting author)

Keywords: Mesolithic, Neolithic, Transition

Presentation Preference - Oral

Archaeology is often governed by national boundaries or focussed on particular cultures. The evolution of the Neolithic is seen as a multifarious process occurring over many millennia in several formative zones of Anatolia, the Levant and Cyprus, and its study is only partially governed by national boundaries. The spread westward of the Neolithic is imperfectly understood, with numerous archaeologists attempting to draw the ‘big picture’, often supplying or endorsing one or several ‘models’ to explain the process.

The spread of the Neolithic into Western Anatolia and Europe occurred over several millennia, involving migrants as well as local players. The reasons for the spread are complex, as are the manner in which the spread occurred. In the Central Mediterranean Basin, the first archaeological evidence for Neolithic attributes goes back to 9000 BC in the Aegean Basin, and at the head of the Adriatic the Transition to the Neolithic is completed by 4500 BC in the Trentino-Alto Adige.

Why so early and why so late?

What happened in between in time and space?

Who were the players?

If archaeology is the means by which to write prehistoric history, we need to visualise the players in their environment, and try to understand their lifeways, motivations and evolution over many generations to pretend to grasp the extent of the Transition from a life lived in symbiosis with nature to one in which nature is controlled, and which, unbeknown to the players, heralded the legacy of explosive demographic growth.

In this paper we will present some of the possible reasons for the spread of the Neolithic, and how some of the autochthonous populations responded, using a few case studies from the Aegean and Adriatic Basins. Sicily and the Balkans, from which we can glean an insight into the highly complex human behaviour and response, when faced with the phenomenon.
migration by nomad-herders. Little efforts have been put into the interdisciplinary studies of the pottery with cord decoration. This presentation aims at examining characteristics of the pottery with cord decoration in the Balkan Peninsula and their temporal and spatial distribution, and explaining how Yamnaya groups and their descendants migrated from the North Pontic area to the Balkan Peninsula.

In this presentation, I deal with two points. The first is to make the integrated analysis in typology and pottery provenance analysis of the northeastern Upper Thrace (South Bulgaria) as a case study. The second is to compare the pottery with cord decoration from the Upper Thrace with that from the eastern part of the peninsula. Firstly, I focus on the pottery with cord decoration from two tell-settlements Ezero and Dyadovo with favorable stratigraphic conditions and investigated the pottery in the northeastern Upper Thrace, and carry out typological and pottery provenance analyses. The former addresses not only the shape and ornamentation of the pottery with cord decoration, but also the decoration technique. Regarding the latter, I will take two different approaches. The first is petrographic analysis, which identifies kinds of rock and mineral in the pottery with cord decoration using a polarized microscope. The second is chemical analysis, which measures the chemical components of the matrix of the pottery using EDXRF by a fundamental parameter (FP) method. As a result of these analyses, the pottery with cord decoration, as well as plain pottery and pottery with the other types of decorations, in both tell settlements will be classified into local and non-local types. Adding the chronological view to them, the analyses indicate transition and variety of the pottery with cord decoration in the Upper Thrace.

Secondly, I compare the findings in the Upper Thrace with the typological characteristics of the pottery with cord decoration from the southern and eastern Romania, the remaining parts of Bulgaria and the northern Greece. Referring to the spatial distribution of Kurgans there, I examine the origin in the northeastern Upper Thrace and the following migration events to the south and the west.

In conclusion, I point out two things in order to understand mobility of the bearer of the cord decoration. Firstly, I will demonstrate a different form of migration in the following stage after the introduction of the cord decoration into the northeastern Upper Thrace, which spread to the southeastern Upper Thrace, the western Upper Thrace and the northern Greece, where no Kurgans were erected up. Secondly, the provenance of the cord decoration from the Upper Thrace was presumably connected with that from the eastern Romania, other than the real provenance area, supposedly the northeastern Pontic area.

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**THI-04 Abstract 08**

**Adriatic Seafarers. Mobility and Social Practices at the End of the 3rd Millennium BCE**

**Author:** Dr. Gori, Maia, University of Heidelberg, Heidelberg, Germany (Presenting author)

**Co-author(s):** Recchia, Giulia, University of Poggio, Foggia, Italy

**Keywords:** Adriatic, Early Bronze Age, Mobility

**Presentation Preference:** Oral

The diffusion of Cetina pottery is a well-recognized phenomenon interpreted as the material traces of migration of small groups on the move from the Dalmatian coast to Italy, Greece, and Malta. This migration is connected to the spread of pottery styles, funerary structures and practices, and prestige items. The so-called Cetina culture is, indeed, an indicator for mobility of the communities inhabiting eastern Mediterranean at the end of the 3rd millennium BCE. It is difficult to understand the exact nature of the “Cetina phenomenon” and the “directions” of these contacts, it is evident, however, that in the northeastern Mediterranean there existed a lively and “international” cultural network. Through the analysis of Cetina features and their contexts, this paper will explore different types of mobility and their influence on societal and cultural change.

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**THI-04 Abstract 09**

**Invisible traces of the exogamous mobility in Late Bronze Age?**

**Interpreting Unfurnished cemeteries**

**Author:** Skvor Jermicic, Brina, Freie Universität Berlin, Berlin, Germany (Presenting author)

**Keywords:** cemeteries, exogamous mobility, Urnfield culture

**Presentation Preference:** Oral

In the contribution we would like to present the results of a comparative analysis made on the grave-goods, attires and burial practices from Late Bronze Age (BrD - BrA) cemeteries from south-eastern Alpine region and northern Carpathian area. In the end of Mittla and in the beginning of the Late Bronze Age, first cremated graves were documented in the south-eastern Alpine region (excluding the graves from Copper age). We know of some other individual graves or smaller cemeteries containing several tens of graves. On this basis, we presume that these cemeteries were intended only for certain deceased members of particular Bronze Age communities. Additionally, the numerous simultaneous metal hoards from Slovenia, which are similar in composition as the rich male graves in the territory of north eastern Pannonia and Slovakia, could also be in part interpreted as testimonies to the deceased. Cemeteries from Northern Carpathian area are in this period on the other hand more numerous and they contain some hundreds of graves. According to our analysis we can state that the best analogies for several grave-goods from the cemetery in Ljubljana (Slovenia) can be found in the objects (specially urn) from distant archaeological sites, pertaining to Pfliny and Suci de Sus culture in the northern Carpathian basin. These analogies, not only in grave-goods, but also in burial rite (cremation in an urn), grave stone constructions and social practices (hording of special objects in a special manner) point to very intensive, probably diverse contacts between the Late Bronze Age communities from the southeast Alpine region and the northern Carpathian area. Taking into account that urns, which contained the ashes of the deceased, acted as representations of the human body, it is interesting to emphasize that in both research areas special types of vessels (jug, cups) were used as urns only in female and children graves. Beside the similarities in the archaeological finds between two research areas, we observe also the similarities in the stone grave constructions. Both in the northern Carpathian and in Radzinca a grave construction made out of one stone slab were documented. Likewise, the graves containing only cremated bones placed on the stone plate were found on both sites.

According to archaeological and anthropological data, intercultural contacts between the southeastern Alpine region and the northern Carpathian area can be observed from the most ancient finds contributed to female sphere. Having in mind the fact that most of these object are totally absent in the territories between two research work areas (Transdanubia, Middle Danubian Unfurnished Culture), we can argue, that we cannot interpret these similarities in the archaeological record as simple result or effect of exchange. According to the data, we can presume, that they reflect directions of the migration of individuals or smaller groups. Which were the motives and mechanisms for these intensive contacts in this particular period? How can we interpret this archaeological data – as traces of an exogamous mobility of women in Late Bronze Age?
Interpreting the Archaeological Record

GreeK Migration along the Ionian Coastline (Southern Italy)

**Author:** PhD Student Crudo, Maurizio, University of Groningen, Roma, Italy (Presenting author)

**Co-author(s):** Jacobsen, Jan Kindlebjerg, Ny Carlsberg Glyptotek, Copenhagen, Denmark

**Keywords:** Cultural Encounters, Greek Colonization, Pottery

**Presentation Preference:** Oral

Since the beginning of times, people have relocated and migrated in search for better conditions, raw materials, or in order to obtain trade relations with foreign markets and cultures. For decades, ancient migrations were primarily explained based on the occurrence and quantities of imported artefacts, thus reaching interpretations that were aligned with the later ancient written sources.

This was the case with the Greek migrations in Southern Italy, often referred to as the ‘Greek colonisation’. The present paper will focus on different waves of Greek migration in Southern Italy, taking the area of the Sibaritide as focal point, as well as on the methods for identifying these foreign ventures within the archaeological record.

From the end of the 9th century BC onwards, an Euboean presence is detectable in the western Mediterranean, including Northern Africa, Spain and Italy. The Euboeans settled in the Sibaritide, where Greek-indigenous coexistence emerged in the settlement of Timpepe della Motta in the first half of the 8th century BC. This coexistence entailed a shared and mixed cultural framework at the site, which is visible in the pottery production as well as in the production of textiles taking place within the sanctuary at the site. In late 8th century BC, the Sibaritide witnessed another Greek migration, that is, the Achaean migration, which most famously led to the foundation of the so-called colony of Sybaris.

Based on analyses of knowhow and techniques within textile and pottery production, including anthropological as well as archaeometric analyses, the present paper seeks to shed light on the possibilities and limitations of these methods for identifying migration in the archaeological record.

The viability of the invisibles: new evidence through technological studies and material analyses

**Author:** PhD candidate Raudino, Anna, La Trobe University, northcote, Australia (Presenting author)

**Co-author(s):** Tysoe, Robert, University of South Florida, Tampa, United States of America

**Keywords:** archaeometry, contacts, Iron Age

**Presentation Preference:** Oral

This study attempts to identify and analyse processes of cultural transformation in south-eastern Sicily when indigenous populations came into contact with ancient Greek settlers during the eighth and the seventh centuries B.C. Historically, it is a crucial moment for Sicily because it initiated an irreversible process of modification of the original indigenous culture. This event brought profound and significant changes to the material culture of the indigenous communities. Earlier studies explain this revolution in material culture as the result of ‘Hellenisation’, a seemingly one-way process of adopting the ‘superior’ Greek culture, with little influence traveling in the opposite direction. However, recent socio-anthropological studies claim that such cultural interactions are more complex and can incorporate not only a two-way process but also maintain the distinct cultural and ethnic identities through the careful selection of cultural features. In order to develop more comprehensive models of cultural contacts and the relationships established between indigenous Sicilians and Greek during this specific period, a multi-disciplinary approach was adopted. This paper focuses on the archaeological analysis of materials discovered in southeastern Sicily and in particular from the indigenous habitation site of Monte Finocchito. The site is critically important case study to understanding the complex relationship between indigenous Sicilians and Greek migrants. During the end of the eighth and seventh century BC new pottery types, evolving and imitating Greek models, appear in indigenous Sicilian graves as a consequence of these cultural changes. The archaeometric analysis allows us to recognize different clay fabrics, to distinguish Greek imports, Sicilian copies and adapted designs as well as entirely new Sicilian forms. The archaeological method permits us to recognise different cultural material objects. The results will be extremely advantageous in tracking indigenous activities, adaptation and adoption and elucidate how the Greek immigration impacted Sicilian societies and local culture. The goal of this study is also to look beyond the cultural material, in order to understand the technology of pottery production and the possible coexistence of imported and local fabrics within a given chronological horizon. In this specific archaeological context, the application of archaeometry, in combination with archaeo-anthropological and anthropological methods, is a successful method to understand the social, ideological and material interactions of the indigenous Sicilian community of Monte Finocchito with the Greeks.

Migration through artifacts – recent researches in the Prislop pass, Eastern Carpathians (Romania)

**Author:** Dobina, Bogdan, County Museum of History and Archaeology Maramures, Baia Mare, Romania (Presenting author)

**Co-author(s):** Suteu, C., 1st December 1918 University, Alba Iulia, Romania

**Keywords:** mountain passage, paleolithic, post Roman, trade route

**Presentation Preference:** Poster

Beginning with 2012 a region in the Eastern Carpathians of Northern Romania was systematically surveyed for the first time. The focus of this research is to, in this date, the study of the mountain passage ways between two historical regions, that of Maramureş and Bucovina. The field survey carried since 2012 and their results so far indicate at least two main terrains of occurrence and quantities of imported artefacts, thus reaching interpretations that were aligned with the later ancient written sources.

Based on analyses of knowhow and techniques within textile and pottery production, including anthropological as well as archaeometric analyses, the present paper seeks to shed light on the possibilities and limitations of these methods for identifying migration in the archaeological record.

Origin and Development of Balbals Steiae

**Author:** MA Janki, Pawel, Antiquity of Southeastern Europe Research Centre University of Warsaw, Legnic, Poland (Presenting author)

**Keywords:** Kurgan, Nomads, Stele

**Presentation Preference:** Poster

Kurgan steiae, also known as babas (Russian: каменного баба, Polish baby kamienne; Kyrgyz: салкан) are anthropomorphic stone statues or slabs set atop, within or around kurgans (barrows/tumuli), in kurgan cemeteries or specially sacred zones on the territory of the Eurasian Great Steppe and surrounding areas. This custom is in practice from the Eneolithic to almost Modern Times. The term babal came from a turkic word meaning “ancestor” or “grandfather”. The earlier examples of these statues are associated with Sredny Stog and Yarmo (Pit Grave) cultures and dated to the 4th millennium BC. Although this custom existed incessantly on many various territories from the Eneolithic to Modern Times, however it was extremely popular in soviet chronity. Turkic Kaganate and among Cumans (Kipchaks). Usually these objects were memorials honouring the dead, but there were some exceptions. For most periods kurgan steieae represented mostly males, however in the Kuman Period female steiae were very popular. Babals commonly depict warriors holding weapons and drinking horns or bowls. There might also depict so many other items like baits and tools. Probably from ballals may derive other kinds of steias, for example: deer stones, Bashiiri lion tombstones and stone rams and horses from Azerbaijan.

The purpose of my poster is the introduction to evolution and development of kurgan steiae and show differentiation this kind of artifac:ure and present the investigative methodology of babas.

New research on animal production and herd management in Swiss and French Alpes during the Neolithic

**Author:** post doctorate Chiquet, Patricia, Museum d’histoire naturelle, Geneva, Switzerland (Presenting author)

**Keywords:** Alps, neolithic, pastoralism

**Presentation Preference:** Poster

This poster will present the first results of the zooarchaeological analysis of several neolithic settlements located in the upper part of the Rhone Valley in Switzerland and in the Northern French Alps and dated between 5500 and 2200 cal BC. The study of the bone remains shows that domestic animals, especially caprines are predominant in the swiss region examined here, even at the beginning of the Neolithic, while in the Northern French Alps, wild game appears to be more hunted.

Taking into account the long term occupation of some settlements, animal production and herd management are explored to define the subsistence strategies of these neolithic communities and the possible movement of the herds to seasonal pastures. Through a comparison of these two regions, we try to gain a better understanding of the territorial and economic organisation of these alpine communities.
**TH1-04 Abstract 15**
The Avellino event: a volcanic eruption and mass migration in South Lazio during the Bronze Age?

**Author:** Dr. Doorenbosch, Marliese, University of Leiden, Leiden, Netherlands (Presenting author)

**Co-author(s):** Ahmedr, F.A., University of Groningen, Groningen, Netherlands

**Keywords:** Avellino, Vesuvius, Italian Bronze Age, landscape reconstruction, palaeoecology, geology, archaeology

**Presentation Preference:** Poster

During the Early Bronze Age, a giant eruption of Mount Vesuvius (Italy) buried a flourishing landscape of villages and fields in the plains to the north and east of the volcano under more than a meter of ash. Inhabitants of the closest sites such as Nola (the Bronze Age Pompeii) could barely escape with their lives. Italian archaeological research since the 1980s has conclusively shown that the population of the Campanian plain did not fully recover for several centuries after this so-called ‘Avellino Event’.

Given the topography of central-southern Italy, the most likely refuge area will have been to the north, in the wetland coastal plains of Latium Vetus: the Fondi basin and the Pontine Plain. In these areas, long-standing Dutch research programs have recently been able to find the Avellino volcanic ash layer, which can be used as a chronological marker.

This means that archaeological and palaeoecological observations of the necessary high chronological resolution and quality can be made to identify changes occurring immediately after the eruption. A joint research program between Groningen and Leiden universities, in collaboration with Italian geologists and archaeologists, aims to demonstrate and document any significant impacts that would result from the presence of the postulated Early Bronze Age refugee population in South Lazio. Because we feel that only the combination of different data can provide reliable answers, a careful design strategy has been built. This includes a detailed landscape and environmental reconstruction, by means of geological and palaeoecological cores, an archaeological investigation of the differences and similarities in ceramic typology between Latium Vetus and Campania, petrographic and isotope analysis. The first results of landscape reconstruction and potential excavation sites will be presented in the poster.

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**TH1-04 Abstract 16**
New monuments of Sintashta period in the Southern Pre-Ural as an indication of population migrations

**Author:** PhD Eugenyev, Andrey, Orenburg State Pedagogical University, Orenburg, Russian Federation (Presenting author)

**Keywords:** Late Bronze Age, Potapovka culture, Sintashta period

**Presentation Preference:** Poster

One of the most controversial problems of the boundary of the Late Bronze Age archaeology is interaction of the population during the Sintashta period. Sintashta culture was allocated on the monuments of South Ural (Chelyabinsk region), and the most well-studied in this region. The settlements (Arkaim, Sintashta, Ustye I, Kamenny Ambar, Kuyasak, etc.) and burial grounds (Sintashta, Krivoe Ozero, Kamenny Ambar, Stepnoe VII, Bolshokaragarsky) etc. are investigated here. In the steppe area of the Southern Pre-Ural region (Orenburg region) monuments of Sintashta period are few. Meanwhile, the region is of interest in connection with a problem of population migrations, especially of interaction between Sintashta and Potapovka cultures. In 1970-1990s Sintashta complexes were investigated in the burial grounds of New Kumak, Ishkinovka II, Gerasimovka II, Bulanovo cemetery (Berezovaya mountain). New monuments of the beginning of 2nd millennium BC were studied in recent years by Orenburg archaeological expedition.

In 2012 the multilayered settlement Maloyuldashevo I was investigated. The materials of excavations contained the triple burial, accompanied by numerous metal implements and pottery.

The funeral ceremony (not typical for the Late Bronze Age position of the buried, the subordination of the two forcibly sacrificed people to the “main” skeleton) reflects the interaction of different cultural traditions - Yamnaya and Catacomb cultures, Sintashta culture and monuments of the Potapovka type. Pottery has many analogies in the Sintashta ceramics. The original rectangular vessel is an indicator of preservation of Catacomb traditions in Sintashta society. Metal artifacts such as knife, bracelets, rings, awls, beads are typical for Sintashta culture.

The funeral ceremony and inventory of Maloyuldashevo complex are typical mainly for Sintashta culture, however there are signs of other cultural traditions. This is connected with the location of this complex in the intermediate area between Sintashta and Potapovka monuments.

Most likely, one of the construction horizons of the Maloyuldashevo settlement belongs to the Sintashta period. This is supported by analogies with the settlements of the Sintashta-Potapovka period and the Sintashta pottery in the cultural layer of the settlement.
THI-05

ALL THAT GLITTERS IS NOT GOLD: NEW APPROACHES TO SUMPTUOUS BURIALS BETWEEN WESTERN EUROPE AND THE EURASIAN STEPPE

Saturday, 3 September 2016, 14:00-18:30
Faculty of Philosophy, Room 209

Author - Dr. Fernández-Götz, Manuel, University of Edinburgh, Edinburgh, United Kingdom (Presenting author)
Co-author(s) - Prof. Johnson, James, University of Chicago, Chicago, United States of America

Keywords: Sumptuous Burials, Identity, Power, Performance
Presentation Preference - Regular session

Ostentatious burials remain the primary means by which we understand socio-economic structures and elite/non-elite binary identity formations. Seemingly, such burials lend themselves to easier modes of quantification as well as qualification given their 'obvious' connections between numbers, types, and placement of grave goods as well as treatment and/or modification of the deceased individual's body with status. In addition, the focus of this session is to consider alternative theoretical frameworks and methodologies that have great potential to tease out more nuanced information regarding the mortuary practices from Western Europe to the Eurasian steppe. In particular, we are interested in combinations of vibrant theoretical frameworks and robust methodologies, including analyses such as isotopic, metallurgical, GIS-based, ceramic, and multivariate statistics to name only a few. Ultimately, we seek not to necessarily overturn inferences regarding ostentatious burials and elite status. Rather we encourage session participants to more critically interrogate how these formulations are arrived at and what new information can be gleaned from burials and burial mounds that have already been excavated and analyzed.

THI-05 Abstract 01

Is it gold that matters? The role of sumptuous burials of women in Bronze and Iron Age Europe

Author - Prof. Dr. Metzner-Nebelsieck, Carola, LMU Munich, Munich, Germany (Presenting author)
Keywords: sumptuous burials of women Bronze Age Iron Age
Presentation Preference - Oral

Ostentatious burials are often exclusively seen within a close type-chrono-chronological framework in time-space related cultural units. Thus archaeologists often analyze sumptuous graves in relation to burials of seemingly lesser importance from the same cultural unit either in order to reconstruct social hierarchies or in order to distinguish specific cultural traits.

In these traditional analyses of ostentatious burials female graves have played little or no role. Analyses which have dealt with female graves dating between the 2nd and first half of the 1st millennium BC have generally concentrated on gender specific topics such as the importance of costumes in relationship to age-groups, regional identities and social standing. Sumptuous female graves are however rarely thematized systematically.

In this paper I will examine ostentatious graves of women in a wide chronological as well as geographical scope in order to ask under which conditions sumptuous female burials occur, how they relate to contemporary male burials in quantitative as well as qualitative aspects and why in some cases they seem to be absent in the archaeological record? I will focus on case studies ranging from the Early Bronze Age in western and Central Europe, the late Bronze Age in Central Europe to the early Iron Age between the so-called western Hallstatt Culture and the Scythians' princely graves of the east European steppes.

THI-05 Abstract 02

Scarcity and dearness: an obvious link? Elite's graves (1300-300 BC) in north-alpine world

Author - Dr. Trémpeaud, Caroline, UMR 8215 Trajectoires, LYON, France (Presenting author)
Keywords: Bronze and Iron Ages, Hierarchies, Methods
Presentation Preference - Oral

During the Late Bronze Age to La Tène B, in north-alpine societies, we see a multiplication of elite's graves. These ones, characterized by an impressive funerary hoarding and so-called "princely graves" ask a lot of questions about hierarchicalisation, status of these individuals and social structures. These questions are supported by a key issue: how deal with the funerary data to express the wealth notion?

Such an approach needs to take into account the difficulties to estimate values. In prehistoric societies, emic approach is not possible; the elic approach is the only one. Thus we need to develop methodological tools in order to class graves against each other.

The focus of my presentation will be to present a methodology developed during my PhD of ranking funerary data, so as to detect social structures. This work is based on a database from more than 1000 graves with 721 elite's graves, from Late Bronze Age to La Tène B, spread over north-eastern France, southern Germany, Switzerland, Austria and Bohemia, which allows multivariate statistics.

The ranking approach depends on a method of weighting graves, to reveal wealth and characterize graves to each other. This method necessitates estimating value of each grave (grave good but also architecture and location), and so applying an emic framework to funerary data. I want to have a critical tool of this analysis grid used to value graves, in order to see the validity and the impact on multivariate statistics developed after.

In fact this method shows possibilities for looking beyond the binary understanding of societies (elite vs. non elite). These new forensic, qualitative approaches make it possible especially to develop a gender approach and a characterization of social structures and their evolution on a long term perspective.

THI-05 Abstract 03

In(ter)regional identities - performance in EIA sumptuous burials of the Low Countries

Author - Dr. Schumann, Robert, University of Hamburg, Hamburg, Germany (Presenting author)
Co-author(s) - Van der Vaart-Verschoor, Sjas, Leiden University, Leiden, Netherlands
Keywords: Early Iron Age, Low Countries, Sumptuous Graves
Presentation Preference - Oral

The emergence of the lavish burials known as Hallstatt chieftain's or princely graves reflects one of the most noteworthy developments in Early Iron Age Europe. These elaborate elite burials of the Hallstatt C period contain beautiful weaponry, bronze vessels and elaborately decorated wagons and horse-gear and are found primarily in Southern Germany and Bohemia. There is, however, also a small cluter of these burials in the Low Countries. These Dutch and Belgian burials contain many of the same objects, all imports from the Hallstatt Culture in Central Europe. New finds and research, including the comprehensive study of all the Dutch and Belgian burials offer new insights into these graves. The elite burials of the Low Countries not only contain far more Central European 'princely' paraphernalia than thought, they also appear to contain Central European 'princely' paraphernalia, challenging the established interpretation of these burials being feeble derivatives. These imported items, however, appear to have been re-contextualized in a regionally specific manner through a destructive burial practice that involved the transformation of both the dead and their grave goods through fire, manipulation and fragmentation.

While the burial rituals seem to differ between the Hallstatt Culture and the Low Countries, detailed examination of rituals in both areas shows similarities as well. The objects interred in these ostentatious graves of the early Hallstatt Period in the Low Countries and those of the early Hallstatt Culture in southern Germany, western Austria and Bohemia also testify large-scale contacts as well as a potentially increasing social differentiation (or at least its representation in burials). The relationships that must have existed between these and other areas in the early Hallstatt period can be addressed and considered on a large scale.

In this paper we present the possibilities of analyses by looking at the ostentatious burials from the Low Countries both from the regional and the international perspective, an approach that leads to a much better understanding of the performance of those exceptional burials.

THI-05 Abstract 04

New Approaches to the Princely Burials of the Hallstatt Culture of the Heuneburg (Southwest Germany)

Author - Dipl.-Rest. Ebinger-Rist, Nicole, Landesamt für Denkmalpflege, Esslingen, Germany (Presenting author)
Co-author(s) - Krauss, Drh. Landesamt für Denkmalpflege, Esslingen, Germany
Keywords: Burials of change, modern excavation, Sumptuous Burial
Presentation Preference - Oral

The Heuneburg on the upper Danube is among the best-researched (intensively investigated) settlement centres of the Hallstatt culture in Central Europe. While the research regarding the settlement structures of the Heuneburg and the surrounding area has been a key element in German Early Iron Age research since the 1950s, contemporary exploration of the apparent princely burials has been relatively neglected in the last 70 years. The targeted excavation of a richly endowed child's burial site, and of a site in which princesses were interred, south of the Heuneburg, has given powerful testimony to the fragmentary state of our knowledge of the sociopolitical processes and structures of the 6th century BC. The presentation offers an exemplary look into the manner in which a
The German archaeologist Claus Olffinger noted that burials containing more than one individual are frequently found in early and mid-Hallstatt period chamber graves. The sample of multiple burials has expanded significantly in the intervening years and it may be time to revisit this mortuary category in light of new evidence. While most multiple burials contain two adults, often a female and a male, male/male, female/female and male/child or female/child combinations are also known. These configurations have traditionally been interpreted as reflecting familial relationships but recently excavated burials indicate that more complex associations for this category of burial are likely. We argue that the early Iron Age elite multiple burial category should be re-evaluated with reference to ethnographic analogy, archaeological evidence from other areas of western Europe, and recent burials excavated in the vicinity of the early Iron Age Heuneburg Hilftorf.

The uniqueness of the late Hallstatt-period textile assemblage from the princely grave at Eberdingen-Hochdorf (SW-Germany) is not limited to its highlighting textile manufacturing as an economic focus in this region, providing differentiated insights into burial customs, the sequences of mortuary ceremonies or insights into concepts about the afterlife. It is relevant that this finds assemblage demonstrates that textiles can only function as indicators of socio-economic structures when they are considered within their archaeological context. This means that conclusions, based on isolated observations of details of manufacturing technique but disregarding the context, remain of limited value with regard to contents and may even be questionable. Deriving from the function of the textiles in the grave the question is not only for what and with which intention this function was associated, but also whether it is at all sensible to distinguish between burial textiles and the textiles of the living.

The beginning of the Great Migration period Chernyakhov archaeological culture (its last stage) was spread in the left bank of the Dnieper in forest-steppe zone. At the same time (periods D1 and D2 European chronology – 360 / 370-440 / 450 AD) on the same area occur several extremely rich sumptuous complexes consisting of prestigious gold objects (brooches, bracelets, neck-rings), the Byzantine silverware production, gold-embroidered garments, ceremonial weapons and horse harness. Findings of individual objects belonging to a prestigious culture of the time are known too. These complexes are not associated with burial grounds of Chernyakhov culture. They were found by chance and were considered hoards. Only one of them (Bo’troy Kemneta) was published by L.A. Matusevich in 1934. The study how complexes have been discovered reveals that they are the burials. In Bo’troy Kemneta burial was in a stone crypt, built at the base of a high bank of a creek, which flows into the river Sudzha. Mapping of all finds indicates their exclusive relationship with the sources of large creeks flowing in deep canyons and at the same time associated with the watersheds of river systems. Discussed sumptuous complexes are very different from the burials of the Chernyakhov culture, even at its highest level examples. There are simple common explanations for this difference: 1. “Chronological”, when the sumptuous burials attributed to later Hun period (the period D3, i.e. 450-470 / 480s AD), when the Chernyakhov culture no longer existed. 2. “Ethnic”: Both of these explanations are not satisfactory: 1. Late burials at Chernyakhov cemeteries in the area between the Dnieper and Don rivers dated to stages D1 and D2 of European chronology. The presence of glass cups (as part of the hearth) is a feature that distinguishes prestigious burial of ordinary cemeteries. 2. There are no grounds for attributing elite single burials to the Hun’s neither by ritual, nor by the inventory. Prestigious items belong to a common in Hunnic time polychrome decoration. Rather we can speak about a direct link with the Late Antique Dynasty whence come the closest analogues of prestigious weapons, harness and silver vessels. Discussed finds belong to the common European horizon of burials of the nobility, the leaders of the barbarian kingdoms, which arose at the beginning of Great Migration period on the periphery of the ancient world. Often death caught up with kings and military leaders of the Great Migrations in the territory and environment in which they had no historical roots, nor stable relations. Their tombs and grave structures are unlikely to be perceived as a place of worship and a landmark of the traditional movement. Perhaps this explains the absence of grave structures and the great efforts spent on to hide the ordinary burial of high-level persons, monarchy and beyond the ordinary general cemetery in protected, perhaps a sacred place. The exceptional volume and value of inventory corresponds to the rank of the deceased in his lifetime. The concept of “center of power” is applicable to the single “princes” and “military chiefs” burials.

The spatial distribution of Iron Age kurgan and settlement sites from the Talgar alluvial fan (ca. 550 sq km) derived from survey reconnaissance and Soviet period site inventories indicates the presence of both commoner graves and elite kurgan burials. The GIS database of the Talgar sites also includes valuable information such as the natural hydrological system, dated geological terraces, and other important topographic features. Our goal is to model a socio-natural system that describes the Iron Age socio-economic, agro-pastoral system and its demographic components. In addition to understanding the relationship between the natural-physical landscape and a mortuary and settlement landscape, we also wish to set the foundation for understanding social hierarchy and the nature of commoner-elite relations.

The mortuary landscape, often robbed in antiquity and destroyed by Soviet agriculture, lacks information on individual burial inventories or skeletal material. Therefore our model relies upon kurgan size dimensions, locations, and density counts in order to model the ancient demographic of the Talgar region and its surrounding environs. Future research in Talgar and neighboring alluvial fans will test demographic models for: (1) population pressure on farming and herding resources; (2) territorial boundaries that define socio-political units within nomadic confederacies; and (3) the rise of social hierarchy within circumscribed regions such as the Talgar fan and its surrounding areas.

By focusing upon landscape features, burial mounds and graves as demographic indicators, new approaches can be developed for modeling changing social landscapes across a branch of the Silk route. This circumscribed region can serve as the first step for building a regional settlement system that incorporates demography, social hierarchy, political organization of territories, and relations and material landscapes that cross-cut diverse regions through an aesthetic known as “animal-style” art.

Funerary performances, including processions, construction of burial mounds, and the deposition of bodies and grave goods, are the primary means by which Iron Age social structure continues to be investigated and inferred. However, the scholarly focus on single massive burial mounds and the amount of internet grave goods, such as found at Alexandropol or Sokolka in present-day south-central Ukraine, skew our sense of the importance of the ‘produced’ nature of funerary performance and aesthetics in favor of static (and more easily quantifiable) monumental and ostentatious displays. Few studies of Eurasian Iron Age funerary practices critically explore how a different approach utilizing the lens of production (in a performative/theatrical sense) might highlight often hidden political facets of burial in Iron Age contexts, as well as more broadly.

Theorists such as Susan Stewart’s (2007) notion of the ‘remarkable’ elements of identification chosen to be iconic of certain periods and events assigned to individuals to demonstrate how burials are acts steeped in political intentionality and manifest power relations. I contend that funerary performances, including audience participation, were miniaturized sensory, and perhaps
more importantly sensual, engagements carefully crafted in grander scale cosmologies of meaning that were themselves crucial constituents of social and political life in the Pontic Iron Age, ca. 700 - 300 BCE. During the course of this presentation, I explore the remarkable nature of Pontic Iron Age funerary performances through a careful disassembling and reassembling of grave good assemblages, mound construction, and mortuary landscapes. Utilizing data gleaned from a modest population of burial grounds, the sites belong to different cultural complexes, like Abashevo, Sintashta and Andronovo and are dated to the Middle and Late Bronze Age. The comparison of these two settings will document the preference for exotics typical of borderlands, especially in times of expansion, political ambition and unrest. Bearing in mind that the choice of materials for one's tomb is deliberate and not incidental, we argue that the individuals buried were probably lesser leaders and their partners with some authority and that their tombs represent the unequal distribution of power. They were members of communities bordered by larger, more stable polities, making the politics of frontiers an important framework within which to understand these assemblages.

TH1-05 Abstract 10
The Kurgans of Scythian Nobility in the Eurasian Steppes
Author - Dr. Habil. Ochir-Goryaeva, Maria, Institute of archaeology Tatarstan academy of sciences, Kazan, Russian Federation (Presenting author)
Keywords: Eurasia, kurgan, Scythian epoch, nobility
Presentation Preference - Oral
Several thousands of burial sites of the Eurasian steppe dating to the Scythian epoch are associated with a number of archeological cultures of the Scythian type. Their funeral rite has been examined in a number of special papers and monographs, which were largely based on a comparative study of kurgans between each other in terms of their particular parameters. The present paper proceeds from a comparative study of all graves and other elements within one and the same mound in terms of their depth and arrangement to each other, as well as in terms of their orientation, according to the cardinal points, on the mound map, i.e. their planigraphy. To my knowledge, this is the first attempt of this kind. The undertaken analysis of the planigraphy of the kurgans is based on the data concerning every component of a mound earthwork such as walls, tunnels, bridges, stone embankments, etc., as well as every grave of one and the same kurgan, including central and secondary burials, horse interments and those of servants, guards and human sacrifices. Such complex earthwork structures, as well as numerous central and secondary burials are to be found only in the case of kurgans of the royal class, hence these are of major importance for planigraphical analysis. The graves located in the mounds have been analysed to produce a number of their arrangement patterns with respect to the spatial representation of kinship and family hierarchy of the Scythian society and to their system of geographical orientation in terms of cardinal points. Importantly, the regional differences in the spatial pattern shown on the kurgan planigraphies profiles seem to be assessed with the cardinal and lateral spatial arrangement of the entire burial constructions in terms of cardinal points. Moreover, if these are taken into consideration, it is no longer possible to maintain the idea of the Scythian-Siberian unity of the archeological cultures of the region, where in fact one deals with two distinct cultural communities. Also, as the present work has shown, there is a logical association between the spatial arrangement of the grave good assemblages in terms of the cardinal points and the ideas the ancient populations held about the location of the world of the dead, as well as their geographical worldview, which belongs to the basic conceptualizations of every ethnic group and finds reflection in archeological cultures as well.

TH1-05 Abstract 11
On the Edge: The Politics of Death at the Ends of the Silk Road, c. 100 CE
Author - Prof. Linduff Kathryn, University of Pittsburgh, Pittsburgh, PA, United States of America (Presenting author)
Co-author(s) - Rubinson, Karen S., ISAW—New York University, New York, NY, United States of America
Keywords: borders, Eurasia, Silk Road
Presentation Preference - Oral
Much has been made of the social and economic exchanges across the Silk Road, from Afghanistan in the west and China in the East. In the later first and early second millennium CE, literary sources at both ends of the route document impressions of the ‘other’ as different from themselves – the residents of dominant state level societies. Material remains certify that the exchange was significant economically, but also culturally. Surely the most visible evidence of the value of that interaction was captured in the funerary contexts at the edges of these polities, where material evidence attests to the local region surounded and shrouded the elite. This paper will consider what message the assorted choice of non-local or non-locally inspired grave deposits, avowed in the first millennium CE by looking closely at two assemblages, one in Afghanistan and the other in China. Across Eurasia at this time foreign imagery, technologies and mortuary practices and uses of artifacts derived from all sectors of that far-flung exchange network and we shall argue that this denotes and documents a cosmopolitan attitude about displaying one’s identity at death. No more telling of the eclectic and intercultural character of those expressions were the grave good assemblages in the six excavated tombs at Tilaya Tepe, Afghanistan, found in a location that could be characterized as bordering on several powerful groups. Materials in those tombs connect imagery from the Near East, Hellenistic Central Asia, southwest Asia, present-day India and China.

TH1-05 Abstract 12
Relative Chronology and Statistics of Bronze Age Cemeteries in the Southern Ural (Urals-Kazak steppe)
Author - Schreiber, Finn, University Berlin, Berlin, Germany (Presenting author)
Co-author(s) - Usmanova, Emma, Karaganda State University, Kazakhstan
Keywords: Bronze Age, Eurasia, Multivariate Statistics
Presentation Preference - Poster
During the EAA meeting in Vlinsz I would like to present a poster from my PhD thesis, which I am currently working on. My PhD project is on the chronology and dynamics of Bronze Age cemeteries in the Southern Urals (Russia/Kazakhstan). For establishing a relative chronology, mainly based on ceramics, I use statistical tools like correlation and correspondence analysis on a selection of archeological burial grounds. The sites belong to different cultural complexes, like Aibahevo, Sintashta and Andronovo and are dated to the Middle and Late Bronze Age.
My poster is about the results of multivariate statistical methods used in archaeology to establish a relative chronology for cemeteries. The methods are demonstrated here on some examples from my current investigations. Information will be provided for scholars without statistical experience. There is also brief information on the geographical and cultural background of these sites.
The poster wants that the multivariate statistics can lead to a more detailed understanding of the development and dynamics in Eurasian Bronze Age funeral archeology and to a better understanding of cultural and social differences.

TH1-05 Abstract 13
Origin of the Polychrome Style Jewellery
Author - MA Janik, Paweł, Antiquity of Southeastern Europe Research Centre University of Warsaw, Legionowo, Poland (Presenting author)
Keywords: Huns, Migration Period, polychrome
Presentation Preference - Poster
One of the most characteristic element of the hunnic culture of the Migration Period is the polychrome style jewellery. In this style the surfaces of gold or gilded objects were decorated with precious or semi-precious stones (like almandines, red garnets, carnelians) or pieces of glass, which usually were red. These ornamental elements were set within strips of gold foil, often surrounded with granulation or filigree. There was another version of this style called cloisonné in which the glass or gemstones were set in compartments of soldered strips of metal foil, separated with wire, over a strip of metal foil. The polychrome style is used in ornamenting dress accessories, horse equipment, diadems, weapons, jewellery and other things. Many researchers have divergent opinions about provenance of this jewellery style. According to popular opinion, the polychrome style was not typical only for European Barbaricum like Carpathian Basin, West Europe or Black Sea region, but it also existed also in Central Asia, north-west modern China and even Korean Peninsula. Moreover the polychrome style not occurred first time during the Migration Period, but much earlier. There are also some polychrome decorated artefacts from East Europe (Sarmatian culture) and Central Asia (Saka-Hun culture and Xiongnu culture) dated to period between II century B.C. and II century C.E. These artefacts are very similar to polychrome style ornamented objects from the Migration Period. Some scholars (Armsenius 1971, 1988) claim that “barbarian” peoples had not such technology and knowledge to shape and stick gemstones and glass pieces to a gold foil. Other scholars (Szmudka 2002; 237-58) affirm that polychrome style evolved from the helmeitic jewellery traditions. The problem is that there are some polychrome decorated artefacts from Iran and central Asia dated to Achaemenid Period! My poster consist of my investigations of the origin and development of the polychrome style jewellery.
Breaking and making the ancestors.

Making sense of the inconspicuous 99% of urnfield graves

Author: Louise, Arjan, Leiden University, Leiden, Netherlands (Presenting author)
Keywords: Personhood, Selection and Transformation, Urnfield graves

The many thousands of cremation graves of the urnfield period (Late Bronze Age/Early Iron Age) are perhaps the most prominent funerary legacy of prehistory in Northwest Europe. In the Low Countries alone more than 600 urnfield locations are known to us today.

The Hallstatt-C chieftain’s graves, famous for their monumental burial mounds and lavish grave goods, belong to this legacy as well. But these make up even less than 1% of the total of urnfield graves. The other 99% are anything but spectacular: mostly they consist of no more than a handful of cremated bones and occasionally a small vessel or broken metal object. An urn does not even seem to have been a necessity. The funerary ritual of the urnfield period is therefore often regarded as simple and uncomplicated.

But are the 99% of urnfield graves really that different from the conspicuous chieftain’s graves? These chieftain’s graves tell us interesting stories about how people thought about their famous dead as ancestors: how these needed to be equipped with objects and which part of their complex social person was represented in the ‘after life’. Can similar stories be found with the inconspicuous 99% of urnfield graves as well? This is in short the question that is central to my PhD project.

Recent studies of cremated bones from urnfield graves already show clues of deliberate incomplete interment of human bodies. The objects on their turn show signs of careful transformation by burning, bending and breaking. Apparently there is indeed more to the urnfield graves after all.

By looking into the compositions of a large corpus of urnfield graves from the Netherlands, Belgium and Germany this study hopes to unravel the ideas about the dissolution and constitution of personhood at death as reflected in the urnfield graves. It will do so by mapping (a) the selection of objects and (b) the treatment of bones and objects prior to burial, (c) the arrangement of bones and objects within a grave and finally (d) the positioning of a grave in relation to other graves.

In this paper I will discuss some preliminary thoughts and present the first results of my research.

LIFESTYLES AT MEDIEVAL CASTLES: CURRENT METHODOLOGICAL APPROACHES

Saturday, 3 September 2016, 09:00-13:00
Faculty of Philology, Room SFS

Author: Rundkvist, Martin, Saltsjobaden, Sweden (Presenting author)
Co-author(s): Wille-Jørgensen, Dorthe, Danish Castle Centre, Vordingborg, Denmark
Keywords: castles, medieval, methodology

This session gathers researchers working with the way people lived in Medieval castles. It aims to showcase the best current methodology to excavate, sample and study the culture layers in and around castles. This also includes work with museum collections from earlier excavations, laboratory methods for extracting information, and strategies for placing the data in a fruitful dialogue with written sources. Important questions are how to identify the functions of buildings and rooms (possibly changing over time), daily activities, diet and the performances of the courtly/chivalric lifestyle, all in relation to the various social and gendered groups who inhabited a castle. The session looks at castles from the viewpoint of their inhabitants, not of their architects, their military commanders or besieging armies.

Finding and understanding the gardens of medieval castles

Author: PhD-student Andreasson, Anna, Stockholm University, Helsingborg, Sweden (Presenting author)
Keywords: garden archaeology, horticulture, medieval pleasure gardens

Gardens and horticulture played important roles in everyday life in Medieval castles. Plant products (food, medicine, spices, textiles and dyes) where needed to maintain diet and lifestyle, but from documentary sources we also know of pleasure gardens, important to health and to maintain the courtly/chivalric lifestyle. In Scandinavia in recent years Garden Archaeology has become a growing sub-discipline. Garden features of different kinds have been excavated for example in medieval towns. But castle gardens are still eluding us. Where do we look for them, how do we study them, and what can they tell us about medieval life?

Archaeological evidence of lifestyle at Viljandi castle, south Estonia

Author: Arvi, Haak, Tallinn University, Tallinn, Estonia (Presenting author)
Co-author(s): Rannamäe, Eve, University of Tartu, Department of Archaeology, Tartu, Estonia
Keywords: castle, Estonia, everyday life

Viljandi was one of the main castles of the Livonian branch of the Teutonic Order in Old Livonia. In spite of a long research history (first excavations were carried out in 1878), the interpretation of the old as well as recent evidence for lifestyle has become into focus of research only in the last years. Although there exists a list of office holders of the Livonian Order at Viljandi from the last years of existence of the Order (i.e. 1554), the question of activities carried out at the castle is far from being ascertained. As the interior of the large majority of the rooms, especially in the main castle (Convent House), were fully excavated already in 1878–79, archaeological analysis has to rely on rather limited data, and the material obtained outside the buildings themselves. Based on the evidence collected during fieldwork in 1939, but mainly in 2000–2004, we concentrate on the information on diet, handicraft, and luxury in the castle, and the temporal changes we have established during the period of usage (ca. 1224–1610). Especially data from the excavations east and southeast of the main castle allows discussing the activities carried out in the castle, and the way these can be traced from the archaeological record. We have employed find analysis, zooarchaeological analyses, as well as reinterpretation of the architectural and written data to ascertain the processes behind the formation of the rich deposits in the yard area east of the main castle.

In addition to conspicuous consumption and widely distributed material, the collected evidence very likely refers to crossovers and making, possibly some other form of bone and antler processing, as well as less specialised waste from the castle area. In conclusion, it seems that the best way to deal with data from the find-rich deposits is to first attempt and interpretation on their formation, to figure out how much these are “typical” or “special” deposits. A few examples will be given in the presentation.
Interpreting the Archaeological Record

TH1-06 Abstract 03
Vanity or Hygiene? Combs and mirror frames in the Vilnius Lower Castle
Author - Dr. Pukienė, Rūta, National Museum the Palace of Grand Dukes of Lithuania, Vilnius, Lithuania (Presenting author)
Co-author(s) - Kaminskaitė, Irmute, National Museum the Palace of Grand Dukes of Lithuania, Vilnius, Lithuania
Keywords: Archaeobiology; History of hygiene; Late medieval period
Presentation Preference - Oral

The complex of Vilnius Castles consists of the Upper Castle on a hill and the Lower Castle located in a valley at the foot of the Castle Hill. The cultural layer of the Lower Castle territory has been accumulating since the 13th century and is 8 meters thick in deepest places. The late medieval layers at the bottom are saturated with ground water and are rich with preserved organic artifacts and wooden infrastructure objects. Over 3000 wooden or such composite artifacts were found while investigating the territory of Vilnius Lower Castle. The findings which are conditionally attributed to hygiene segment compose small part of this collection and encompass combs and mirror frames. During the investigation 23 combs and 17 mirror frames were found, as well as 7 findings related with their production: blanks and wastes. These artifacts represent the period of the 14th - 16th centuries. The majority of combs are made of boxwood (Buxus sempervirens L.) but two items made of Rosaceae (subtribe Malmeae) wood were also determined by the wood anatomy analysis. The combs are rather uniform, double-sided, rectangular with lenticel profile and quite simply decorated. The mirror frames are round-shaped with a round socket for a reflecting plate. The majority of 9 frames are turned from softwood planks. One frame is made of pine (Pinus sylvestris L.), two – of spruce (Picea abies (L.) H. Karst) and three – from the wood of fir (Abies alba Mill), which is not native in Lithuania. One mirror frame had two sockets on opposite surfaces and was made of a cross-section of lime (Tilia sp.) round-wood. This frame was decorated with carbon-black triangles. No traces of reflecting plates were found in any case but adhesive paste made of chalk and animal glue was detected in three frames. The specific production technology and the selection of material indicate that combs and at least a part of mirror frames could be imported. Both combs and mirror frames are not massive finds in medieval old towns. In the Vilnius Castle the ratio of mirrors to combs is quite high as compared with other European archaeological sites. Mirrors and combs were used for personal and fashion hygiene. Being luxury goods they showed the social status of a person too. Perhaps the proportions of these items were influenced by Christian views and the presence of combs in certain territories in contrast with the liturgical rules or rules of some monastic orders, the mirrors have been considered the symbol of vanity for a long time.

TH1-06 Abstract 04
Tableware in the Vilnius Lower Castle: function, significance and evolution
Author - PhD student, Aradiutė-Mainauskaitė, Skaisa, Vilnius University, Vilnius, Lithuania (Presenting author)
Keywords: dining, tableware, Vilnius Lower Castle
Presentation Preference - Oral

Recent research has continually been focused on the feasts and dining of the Middle Ages. Significant attention has been given to the types of food that was consumed during medieval times by different social classes of the time as well as the reconstruction of medieval recipes. Although tableware plays an integral part in feasts and dining culture, its exact development, function and importance to the different social classes and cultures has mostly been overlooked in these studies. The territory of Vilnius Lower Castle is chosen for the present study as it played a significant role during the late medieval period of the Lithuanian-Polish Commonwealth era. Moreover, the territory distinguishes itself with continuous chronological records, dating back to the first mention of Lithuania as a state. The Palace of the Grand Dukes of Lithuania played a central role in this area as it was the residence of the grand dukes of Lithuania and the kings of Poland. Other buildings in order of importance were the Bishop’s Palace and the Cathedral, as well as the Arsenal and barrackc, houses of nobles and ordinary townspeople. Therefore the entire territory of Vilnius Lower Castle reflects the lifestyle of the grand dukes, nobles, nobility, clergy and citizens, as well as their connections with Western cultures.

An analysis of function, significance and evolution of the tableware found in the Vilnius Lower Castle is presented in this paper. The aim is to explain the table culture and dining traditions through the investigation of the available archaeological and historical sources.

TH1-06 Abstract 05
Iron nails of cultural layers from Klaipeda castle: a functional aspect
Author - Master Stankavičiūtė, Eglė, Palanga Resort Museum, Palanga, Lithuania (Presenting author)
Keywords: Iron nails, Klaipeda castle, Medieval
Presentation Preference - Oral

This study is dedicated to introduce the auditor with currently in Lithuanian archaeology not widely analysed archaeological findings group – iron nails. In 2014, during archaeological excavations of Klaipėda castle, more than 13 000 units of nails and their fragments were collected, which, according to cultural layers, corresponds with Medieval and Early Modern ages of Klaipėda castle, and also city historical development. This study focuses on during archaeological excavations in year 2014 in Klaipėda castle obtained iron nails types function, their adaptability in the old Klaipėda city constructions and the mode of life. Latter research resulted more data about Medieval and Modern ages of Klaipėda castle.

TH1-06 Abstract 06
Glimpses into the armed life in the medieval castle of Raseborg
Author - M.-A. Teräs, Ehta, University of Helsinki, Helsinki, Finland (Presenting author)
Keywords: Material culture, Medieval castle, Weapons and armour
Presentation Preference - Oral

From the end of the 14th century to the middle of the 16th century, the castle of Raseborg was the administrative center of the region of Western Nyland (FI, Uusimaa) in Finland. The ruins and surroundings of the castle have been under research since 1890. The most recent archaeological investigation has been done 2008-2009 and 2014-2016 especially concentrating on the research of the surroundings of the castle. During the restoration works and archaeological excavations done within these 126 years there has been collected diverse find material containing bunch of objects related to military life. Because the historical sources related to Raseborg are quite fragmentary, are these objects crucial source material when trying to interpret the military aspects of the life in the castle. Raseborg was definitely a stronghold that needed to be equipped in case of attacks or sieges. About this tall especially weapons mentioned in the inventories of the castle.

As well as indicating preparation for conflict, weapons and armour belonged to everyday life at Raseborg. For example, they were a part of military dress, so it is clear that in a place where soldiers lived and military culture was clearly visible, some remains of military culture would be found. About this side of military life tell especially personal weapons and armour, that are not visible in literary sources related to Raseborg, but can be reached via archaeological finds. By studying the found objects and historical sources related to the castle and comparing the data collected, it has been possible to consider the military side of the life of the castle more critically.

Historical sources have given the archaeological material the context they needed so that the people behind the objects could be reached more closely.

TH1-06 Abstract 07
A Fief Holder’s Castle.
Case study of Häme Castle in Finland in the beginning of the 16th century
Author - Hockman, Tuula, University of Tampere, Finland (Presenting author)
Keywords: Häme castle, Tott family, written sources
Presentation Preference - Oral

This paper is a case study on the significance and value of a castle for a fief holder’s life – using as an example the era of the Tott family in the Finnish castles, especially the fiefs of Lady Ingeborg Åkesdotter Tott (fief holder of Häme Castle 1497/1504–1507) and of Åke Jöransson Tott (fief holder of Häme Castle 1508–1520). A fief holder’s duties were administrative and military on the level of the realm (as a member of the council of Sweden), as on the level of the län (administrative district) as in the castle. To be able to take care of their duties, the medieval fief holders also lived in their castles.

The paper is based on the written sources, the letters which are published e.g. in Diplomatarien Fennicum and SDHM (even if it the building itself goes inspiration). The aim of the paper is to examine in which way the castle and the life in it is mentioned in the correspondence of Ingelbo Åkesdotter and Åke Jöransson.
The selective deposition of metalwork in the Bronze Age: A pan-European phenomenon?

Saturday, 3 September 2016, 09:00-18:30
Faculty of Philosophy, Room 201

The Bronze Age hallmarks the rise of a globalized metalwork exchange. New technologies involved such as copying, re-cycling even suggest that it was sustained by new, more economizationalistic attitudes towards material. This seems in marked contrast to the deliberate deposition and giving-up of metalwork across Europe. Understanding the rationale behind these practices remains one of the major challenges of European Archaeology. Research by scholars from different countries has shown that this ‘giving up’ was not arbitrarily done, but shows particular patterns: specific objects seem to have been placed in specific places only. In this session, we aim to chart the general characteristics of this ‘selective deposition’ of metalwork during the Bronze Age, by inviting scholars from different ends of Europe to present overviews and interpretations of this remarkable practice. Questions to focus on will include: Are there general, widely-shared aspects to this practice across Europe, or is the 'phenomenon' no more than an array of local practices that differ substantially from region to region? Was it a cultural phenomenon that is 'unique' for Europe, and if so, what exactly its distribution? Was deposition of metalwork in metaliferous regions essentially different than in non-metaliferous regions? We invite archaeologists to present the patterns of their region, and aim to cover Europe from the far West (Ireland) to the Far East (Ukraine, Russia). The focus will be on different periods of the Bronze Age, starting from the Early Bronze Age until to the Late Bronze Age with the aim, to recognize variable tendencies of metalwork depositions across time and space.

Object deposition in Central Norway c. 2350-500

Author: Phd Henriksen, Merete, Norwegian University of Science and Technology, Trondheim, Norway (Presenting author)
Keywords: Late Neolithic, Bronze Age, Object deposition, Central Norway
Presentation Preference: Oral

Object deposition, mainly in wetland environments such as bogs and lakes was practiced in Central Norway throughout the Late Neolithic and the Bronze Age (c. 2350-500 BC). In the Bronze Age, it was one of the northernmost regions in Europe where the deposition of metal work took place. However, although bronzes constitute a significant amount of the total number of objects deposited, the group as a whole is characterized by a variation in objects and materials and includes objects made of bone, amber, flint and wood alongside objects of bronze and gold.

Among these finds we find a well-preserved wooden stool with Bronze Age carvings from Husstad outside Trondheim, found together with wooden platters and cups probably used in a ritual meal. Although there are differences in how the various objects were treated and deposited, they all seem to follow the same distribution in time, with significant peaks in the late Neolithic/Early Bronze Age (c. 2350-c. 1500 BC) and at the end of the Bronze Age (c. 900-500 BC). Thus, they seem to represent related practices.

The ethnographers nevertheless did accept their obligations like studying the uncovered remnants. Researches in Post Medieval Agsu town since 2010 March made valid post medieval archaeology. Medieval Agsu town was the largest city of Azerbaijan for the number of population and the area capacity in post medieval age. The town which was built in 1735 by Nader shah covered 40 hectare area. The town exposed to attacks and had been capital of Shirvan khanate. On March, 2010 Agsu Archaeological Expedition of ANAS Institute of Archaeology and Ethnography conducted excavations in Medieval Agsu Town under guidance of Professor Gafar Jabiyev and PhD Fariz Khalilli in initiative and with support of MIRAS Social Organization. Along with studies of medieval monuments of Azerbaijan is novelty in archaeology. Scientists have not been considering post medieval studies as object of archaeology but concerned it to ethnography.

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Keywords:
Archaeology, Azerbaijan, Post Medieval

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TH1-07 Abstract 03
Taming the Might of Bronze – Localisation of Bronze-Related Ritual Practises in Bronze Age Finland
Author - MA Saipio, Jarkko, University of Helsinki, Helsinki, Finland (Presenting author)
Keywords: Bronze Age Fennoscandia, Ritual archaeology, Structured deposition
Presentation Preference - Oral
The area of present-day Finland was a crossroads of Scandinavian and Russian bronze networks throughout the local Bronze Age (1900/1800–500 BCE). Even though the archaeological assemblage of Bronze Age bronze artefacts is not abundant in the area (numbering less than 200 specimens), relatively well-established relations to eastern and western bronze centres are indicated by both imported bronze objects (predominantly of Scandinavian origin) and local casting of Russian bronze artefact types. Interestingly, while many of the bronze object types encountered in Finland were obviously connected with long-distance networks, their deposition patterns appear highly localised even within the area of Finland. Carts and daggers seem to have been especially prone to change their roles when travelling between eastern and western or southern and northern Finland. Such regional differences are discernible not only in differential treatment and significance of specific artefact categories but also in general relations between bronze technology, mortuary rituals and ritualisation of landscape. This paper suggests that local ritual practises of Stone Age origin had substantial impact on deposition patterns of bronze artefacts in Bronze Age Finland. Continued influence of Neolithic ritual frameworks may also have contributed to the general scarcity of bronze in the area throughout the Bronze Age.

TH1-07 Abstract 04
Early Bronze Age metalwork depositions in Denmark
Author - Viisä, Marike, Leiden University, Faculty of Archaeology, Rotterdam, Netherlands (Presenting author)
Keywords: Denmark, Early Bronze Age, Metalwork depositions
Presentation Preference - Oral
Denmark is known for its rich, well-documented archaeological record dating to the Bronze Age. Metalwork has been found in bogs, on dry land and in burials. However, Denmark is a non-metallic region, which means that all metal had to be imported. And yet, valuable metal objects were deposited and never recovered. Some very spectacular and famous finds have been found in Danish bogs, like the Trundholm Sun Chariot and the bronze cuirass. A strong tradition of interpreting these finds in terms of religious and votive offerings, exists in the area, going back to early archaeologists from the 19th century and their interpretations. Another research tradition distinguishes different categories of non-religious hoards, for example metalworkers’ hoards and traders’ hoards. However, these rigid classifications fail to fully explain these deposition practices. More recent research has shown that patterns seem to have existed regarding deposition of certain objects in wet areas, like bogs, and other objects in burials. The emergence of these deposition practices in the Early Bronze Age in Denmark, going back to the Neolithic, is the topic of the present study, with a particular focus on Jutland. Selective metalwork deposition practices in northwest Germany (western Schleswig-Holstein and Niedersachsen) and the north-western part of the Netherlands are part of the present study as well in order to acquire an increased understanding of the Danish patterns and to set these in a wider regional perspective.

TH1-07 Abstract 05
Horse harness in Late Bronze Age hoards in southern Scandinavia and the southern Baltic area
Author - PhD Sarauw, Torben, Museum of Northern Jutland, Aalborg, Denmark (Presenting author)
Keywords: hoard, Horse harness, late Bronze Age
Presentation Preference - Oral
In the summer of 2014, a late Bronze Age hoard was found and excavated in Northern Jutland, Denmark. The hoard not only contained both male and female items, but also several parts of horse harness and bridles, bearing witness of the use of two-horse teams. Most surprisingly, several meters of leather straps were preserved. Furthermore, cheek pieces and phalerae were in situ on the leather straps allowing a reconstruction of parts of the bridle. Apparently, a similar tradition of deposition took place in a large area corresponding to Southern Scandinavia and the southern Baltic area.

TH1-07 Abstract 06
The metal hoards practices in Central and Western Europe: a statistical and geographical approach
Author - Dr. Blitte, Hélène, PARI, France (Presenting author)
Keywords: Bronze Age, Hoards, social practice
Presentation Preference - Oral
During my PhD I was able to study and to characterize the hoard practice of five European regions during the Bronze Age. These areas were chosen according to their high number of hoards and their affiliations to different cultural complex or their strategic position. The study focused on: Western Carpathians, the Mitteleiche-Südost-Balkan (central Germany), Denmark, the Burgundy doors (Belgium, Eastern France, south-eastern Germany) and the Amorican Massif (Western France). The single finds were included in the study, since they are part of the same practice as the so-called metal hoards. The aim of this PhD was to study the high variability of these hoards and single finds in space and time, in order to better understand this social practice. In this way, different statistics have been used to characterise a GIS has been developed for each region. 1555 hoards and 2776 single finds have been analysed. The results of these analyses show similarities between the regions as well as regional preferences. In terms of similarities, we can refer to the categories of objects deposited in the hoards or as single finds, which are mostly weapons, adornments and axes. The evolution of the single finds is similar to the evolution of the hoards in most regions, except in Denmark. In all regions, the complexity of the hoards composition (number of categories) increases through time, as well as the number of hoards with fragmented objects. However, this fragmentation is relatively marginal since very few hoards have a high level of fragmented objects (the median of the hoards is zero). Most hoards and single finds have been buried in low altitude and the spatial analysis reveals high densities of hoards near confluences of rivers.
Regional preferences have been observed in depositional contexts like in Denmark where a lot of hoards have been buried in swamps or in the Burgundy doors which have a lot of immerged single finds. The favourite objects are different from one region to another: axes in the Amorican Massif and the MESG or weapons in Denmark and the Burgundy doors. In terms of deposition, differences appear between the studied areas. Thus, the Amorican Massif is the only one with a majority of one-type hoards and also with a majority of homogeneous hoards (objects from a unique cultural area). Hoards in domestic contexts could have been also a regional preference, as it is well known in Western Carpathians but rare in the Amorican Massif and totally missing in Denmark. Differences according to several criteria, some of them appeared earlier in Western Carpathians and the MESG than in Denmark and the Amorican Massif. In this way it seems that some modalities of the Bronze Age hoards practice took place first in Central Europe before spreading to Northern and Western Europe. Besides, this hoard and single find practice necessarily reflects individual and collective initiatives.

TH1-07 Abstract 07
Oscillating Metal - comparing selective depositions and graves in the Bronze Age of Central Europe
Author - Dr. Neumann, Daniel, Frankfurt a. M., Germany (Presenting author)
Keywords: Bronze Age, Grave, Selective Deposition
Presentation Preference - Oral
The Bronze Age is characterized by a large amount of voluntarily deposited objects made from Bronze. This presentation will especially set the focus on similarities and differences between selective depositions and graves by comparing both from different angles and scales.
As both archaeological features indicate social significance the examination of the regionally and chronologically changing patterns reveals different strategies of social expression. Furthermore, the interplay between both which is known from many areas of Europe enables us to contrast areas of diverging ritual practice by addressing the selection of objects as well as the varying quantity. This paper takes the pan-European development into account, but will mainly focus on data from Southern Central Europe which is an area - unlike others - that yielded bronze objects from graves and hoards as well.

TH1-07 Abstract 08
The selective deposition of metalwork - an introduction
Author - Nessel, Blanka, Institut für Geowissenschaften, Ruprecht-Karls-Universität, Heidelberg, Germany (Presenting author)
Keywords: Bronze tools, hoards, selective deposition
Presentation Preference - Oral
Bronze Tools and other finds associated with metal working processes are part of the inventory of most Bronze Age depositions. The tools in question have mainly been identified as metal workers tools since they appear in hoards. But functional analyses show, that this is only valid for a comparably small amount of the items. Specific patterns of the treatment and relative occurrence of tools can be identified in hoards throughout Europe. Large mixed depositions with a majority of bronzeas with various functions are
Contrasted by a limited number of small hoards, which are dominated by tools. This makes at least two general types of selective deposition of bronze tools obvious. The amount of bronze tools in large hoards with varied compositions are considerably closer to other types of bronze.

Conversely, small hoards, which are dominated by tools, is a comparatively rare type of hoard. Tools made of other materials than bronze are seldom included in Bronze Age depositions. Other depositing practices were used for these items, which may also be understood as part of a pan-European phenomenon. This talk focuses on the question, if we can interpret hoards and other depositions of tools as the personal legacy of a person or a specific group of people such as craftsmen, or if it should be understood as part of a social event, where specific groups of people were invited to take part while others were excluded. How much can this pan-European distribution and composition pattern tell us about the structuring rules of depositions?

TH1-07 Abstract 09
Fragmentation as a common feature in European Bronze Age hoarding
Author - Dr. Marek, Regina, Landesamt für Denkmalspflege Sachsen-Anhalt, Halle, Germany (Presenting author)
Keywords: Bronze Age, Deposition
Presentation Preference - Oral

Deliberate fragmentation is a well known feature in Bronze Age hoards all over Europe, shifting in space and time. The aim of the paper is to discuss and specify the german term „Brucherzhorte“ (scrap hoards) and to discuss these finds. We will consider especially depositions where broken pieces outnumber all other metal pieces. To illustrate this the central German „scrap hoard“ from Eisterwerda was chosen consisting of more than 320 bronzes, most of them broken, bent, damaged or cut into pieces: casting debris, tools, ornaments and weapons. The aim is to discuss the variability of fragmentation, the degree of typologically important bronze and the relation of regional versus imported artifacts. Similar structured scrap hoards from different European regions will be introduced and compared.

Are we dealing with a random choice of fragments collected for re-usage following regional weight systems? Do scrap hoards represent results of single exchange transactions? Following recently discussed theories the scrap hoards will be defined as a special hoard group, separated from so-called craftsman’s deposits and the hoarding of raw metal (”Susseze“).

TH1-07 Abstract 10
Places of deposition of metalwork assemblages in West Bohemia
Author - Prof. assist. Jirí, Luboš, Institute of Archaeology of CAS, Prague, Czech Republic (Presenting author)
Co-author(s) - Dr. Šumberová, Radka, Institute of Archaeology of CAS, Prague, Czech Republic
Keywords: Bronze Age, hoards, Landscape
Presentation Preference - Oral

One way to answer questions concerning the selective deposition of metalwork in the Bronze Age is the detailed analysis of the place where metalwork assemblages were deposited. A territorially and chronologically defined sample of such assemblages – hoards – was deliberately selected. We assume that if hoards had differing functions in different periods and/or territories in the past, the data obtained through a single analysis of a de facto heterogeneous set of objects would affect the quality of the final interpretation. Our chosen method, the targeted analysis of a closely-defined set of objects, helps eliminate this risk, and allows the subsequent testing of the newly-obtained data on an even wider set of objects that seem to show identical features, but have different territorial or chronological ambit. We therefore focused on 31 Unfiffeld Period hoards recorded to date in the West Bohemia region. For our questions, it is important that it was possible to determine precisely the original location for 27 of the hoards. The field survey focused mainly on evaluating the subjective reception of the given space in order to assess potential links of the hoards to significant natural features. This analysis found a surprisingly narrow group of natural features that could have influenced the choice of a location suitable for hoarding: namely rocks or distinctly rocky terrain, dominant hills in the landscape, watercourses and ravines. The connection of West Bohemian bronze hoards to such features indicates their sacral function, likely as votive offerings.

TH1-07 Abstract 11
The Copper Highway - An Overview of Early Bronze Age Hoards in South Bohemia
Author - Dr. Jan, University of South Bohemia, Ceske Budejovice, Czech Republic (Presenting author)
Co-author(s) - Chvojka, Ondřej, University of South Bohemia, Ceske Budejovice, Czech Republic
Keywords: copper ingots, Early Bronze Age hoards, South Bohemia
Presentation Preference - Oral

The territory of South Bohemia provided an important link between Danube valley and Central Bohemia in the Early Bronze Age. There are currently more than 80 hoards known from this area, a large part of them were discovered in the last two decades, thanks to a massive use of metal detectors. Not surprisingly, a number of hoards include cast copper ingots of various shapes, transported from the Alps to the north. Although copper ingots represented undoubtedly valuable items, thousands of them were deposited under the ground and never picked up again. In this presentation we are going to discuss possible interpretation of these hoards as votive offerings or merchant’s hoards. Attention will be paid also to the chronology and technology of artefacts found in Early Bronze Age hoards.

TH1-07 Abstract 12
Unfiffeld Period hoards in South Bohemia
Author - Doc. Chvojka, Ondřej, University of South Bohemia, Ceske Budejove, Czech Republic (Presenting author)
Co-author(s) - John, Jan, University of South Bohemia, Ceske Budejovice, Czech Republic
Keywords: metalurgy, South Bohemia, Unfiffeld Period hoards
Presentation Preference - Oral

Not only in Czech archaeology, but also in other countries, the finds acquired by metal-detectors are the phenomenon of last decades. It also applies to metal hoards from the Late and Final Bronze Age (Unfiffeld Period), which are summarized in this presentation. The region of interest is South Bohemia, from where 23 metal-hoards from the Unfiffeld Period (i.e. Bz C2D – Ha B3) were known 15 years ago. In the last years the number increased to 51 currently registered hoards. In comparison with the older finds, the most of new hoards are exactly located and in many cases documented in situ, which help us to interpret them, sometimes with the help of chemical and archaeobotanical methods. The new finds bringing extraordinary quantitative as well as qualitative enrichment of our knowledge of this Bronze Age phenomenon. Unfortunately only a (small?) part of new metal-hoards are deposited in museum collections, while many others disappeared without any documentation in private collections.

TH1-07 Abstract 13
O’ mighty Danube. The deposition of swords in rivers in the area of middle Danube
Author - Mgr., PhD Báča, Martin, Department of Archaeology, Faculty of Arts, Comenius University, Bratislava, Bratislava, Slovakia (Presenting author)
Keywords: Danube, deposition, swords
Presentation Preference - Oral

The area of middle Danube was a focal point for introducing swords at the end of the Early Bronze Age. It is well known, that since their introduction they occupied a special place in material world, as is the case of Aps type swords. These first swords, as soon as they started to be produced were deposited in rivers. This special type of deposition practice was soon followed by swords of Bos type family, when the only place you could find a sword in this area was in grave or river. This practice continuously gained momentum and reached its peak at the beginning of the early urnfield period (BD-HA). Surprisingly, there is almost complete lack of other types of metal deposits in the area of middle Danube during this period. It is most striking when compared to hoard-rich areas in central and north Slovakia, Czech lands as well as eastern Hungary, where swords were among other types of hoards primary deposited in „dry land“. This paper will be based on my personal long-term, not yet published research. Since hallmark studies by W. Torbriegel, R. Bradely and S. Hansen, this area received some research attention. However, I still lacked more robust theoretical models for interpreting this interesting archeological record in context. I will provide a detailed overview of situation reinforced by basic and multivariate statistics. Hypotheses are postulated and tested through theoretical models and methodology based on hermeneutics, advanced formal logic and some basic game-theory elements.
Interpreting the Archaeological Record

TH1-Interpreting the Archaeological Record

involve the removal of metal objects from circulation. We will highlight the patterns observable in the composition of these hoards and compare them with other depositional contexts such as graves and settlement finds. Based on these comparative analyses we will attempt to reconstruct various social practices that involve the removal of metal objects from circulation.

TH1-07 Abstract 15
Late Bronze Age metal deposition practices on the southern outskirts of the Carpathian Basin

Author: Hrivje, Katalin, Institute of Archaeology, Zagreb, Croatia (Presenting author)

Keywords: Carpathian Basin, Late Bronze Age, settlements

Presentation Preference: Oral

When attempting to study the cultural manifestations of the Bronze Age, it is necessary to point out that the development of metallurgy intensified new social practices such as depositing metal objects. The Carpathian Basin is a region with a high density of metalwork hoards present throughout all the phases of the Bronze Age. Its southern edges, the Sava and Drava River Basins, see the peak of bronze object deposition in the Late Bronze Age.

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The standardised structure of the content of the so called Tolnánémedi type hoards (18 hoards from western Hungary, basically sets of ornaments and a few weapons and tools) is a clear indicator of the practice of selective deposition, and supports the assumption that this group of finds was buried for the same reason in the entire territory connected to Transdanubian Encrusted Pottery style during the Middle Bronze Age. When comparing the numbers of the artefacts from these hoards with the data coming from the graves of the same region during the same period the numbers show the multiple of one person's attire.

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TH1-07 Abstract 18
Bronze Age hoards deposition in the Upper Tisa Basin: time, space and cultural context

Characteristic feature of the European continent population in Bronze Age is metal works deposition in form of “hoards”. Upper Tisa Region (UTR) is one of the richest in Europe on the finds of “hoards”: nearly 500. From the topographical point of view it’s very various. UTR, especially the eastern part, is rich on different mineral resources (such as salt, gold, copper). During Bronze Age at local population, by an insignificant exception, the cremation as a mortuary rite was dominated.

The first metal works hoards in UTR appeared at the beginning of Copper Age. At the Late Copper Age (Balen culture, Cotofeni culture) and in the Early Bronze Age (Maik culture, Nieszeg culture) the tradition of deposition was not continued. The Middle Bronze Age (BA2) is a new stage of hoarding in UTR. Culturally they belong to Ottoman-Füzesabony culture and early phase of Suciu de Sus culture. Geographically they belong to eastern part of UTR. The earliest hoards consists mainly of prestige objects (ornamented weapons and gold wares).

Author examines two versions of appearance of this phenomenon in UTR: 1) tradition of deposition arose up as a result of internal development of local Bronze Age society; 2) tradition of deposition arose up as a result of external contacts of local tribal elites. Development of this tradition continuing with maximal distribution in periods from BD-HaA1 (Suciu de Sus and Gava cultures) and till the end of Bronze Age.

TH1-07 Abstract 19
Going with the flow? Atlantic Bronze Age metalwork deposition practices

Author: Dr. Gibson, Cabrina, University of Wales, Salisbury, United Kingdom (Presenting author)

Keywords: Atlantic Bronze Age, ebbs and flows, metalwork

Presentation Preference: Oral

As the title of this session proposes, the deposition of metalwork is one of the defining characteristics of the European Bronze Age. Superficially, certain types of objects were seemingly deposited in similar ways across supra-regional areas, suggesting widely shared socio-ideological practices. Scratching below the surface, however, reveals a myriad of complex and competing traditions both across space and through time. In particular, regions rich in raw metal sources (e.g. copper, gold and silver) exhibit marked differences in depositional practices to those areas that lacked locally-available ores. This paper will draw upon a large relational database created for a research project on ‘Atlantic Europe in the Metal Ages’ to highlight a few of the key patterns
Selective deposition of Bronze Age metalwork in the British Isles is a well-documented phenomenon which has been studied intensively by a number of researchers. Initial work focused primarily on establishing and refining typological frameworks based on patterns of association within hoards. With the realisation of the selective nature of Bronze Age depositions however, it became clear that the role of bronze extended beyond its value as a commodity buried for safekeeping and storage, and that deposition was part of a long-standing social practice represented in the archaeological record by buried metal objects. The landscape context where the structured depositions took place, must have been viewed as suitable for that purpose by individuals and communities involved in the act. As such we might expect to see an inherent structure in the depositional settings of metalwork, preserved by the topography and the relationship to environmental and cultural landscape features, exhibited by the finds spots.

Recognising these patterns has for the most part been a qualitative process, which relied on a visual assessment of the distributions; a difficult task considering the seemingly random distribution of most metalwork. In this context, identifying and evaluating any depositional patterns is best handled through the use of GIS and spatial analysis, which surprisingly has not been applied to the Bronze Age metalwork data in Britain. This paper explores the long-term potential of wide-scale application of multivariate logistic regression and Monte Carlo simulations to the distribution of Middle Bronze Age (c. 1500 - 1150 cal BC) metalwork, through a regional case study focused on the Isle of Wight. The aim is to establish whether any significant relationships between the finds spots and their landscape settings can be identified, and if these varied between hoards and single finds.

Focusing on a relatively small, naturally bounded region with a high density of Bronze Age finds, allows us to understand the suitability of spatial analysis to the data and questions at hand, and relate the structure of the data-set to cultural processes leading to deposition with a degree of confidence and subjectivity not afforded by qualitative research.

Attention is paid in particular to exploring the divergence of the depositional characteristics of metalwork from those exhibited by randomly distributed data to establish whether similar patterning could be arrived at purely by chance, and, by contrasting different types of metalwork, whether this had an influence on the location of the depositions. Ultimately, a systematic approach to metalwork depositions is required to verify some of our assumptions on the role of landscapes in the deposition process, and to create a baseline against which further discussion and analysis can take place.

**Keywords:**
- GIS
- Spatial analysis
- Palaeogeography
- Palaeolandscape
- Palaeoclimatology
- Palaeoenvironmental analysis
- Cultural landscapes
- Bronze Age metalwork
Late Bronze Age metal depositions in the West fringe of NW Portugal: contingencies

Author - Sampaio, H., Laboratório de Paisagens, Património e Território (Lab2pt), Guimarães, Portugal (Presenting author)
Co-author(s) - Bettencourt, A., Laboratório de Paisagens, Património e Território (Lab2pt), Guimarães, Portugal
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Keywords: Agency, Metal hoards, Minho

Deposition of metal artefacts during the Bronze Age is a wider phenomenon attested all over the Europe. Occupying a western end position rich in mining minerals, the North-eastern Iberian Peninsula also witnesses these kind of past societies manifestations during the mentioned period. The present work aims to explore the archaeological remains of those practices in a narrowed part of the Iberian, specifically, in the Atlantic fringe of the North-western Portugal (between the basins of rivers Ave and Minho) during the Late Bronze Age. For that, it will be taken into account some of the regional available data, including in progress research, in order to verify some contingencies of such a complex past agency.

Such a task will not only prioritize the different types of metal objects, their hypothetical biographical character and chronologies, but, specifically, and whenever possible, their micro and medium contexts of deposition, including recent contributions from fieldwork research. In a regional scale it is interesting to attest that some deposition preferences prevail.

between European and Near Eastern traditions

Author - PD Dr. Reinhold, Sabine, German Archaeological Institute, Berlin, Germany (Presenting author)
Keywords: Cauldrons, Hoards, Ritual practice

Hoarding metal objects is an important ritual practice during the Bronze Age, both in Europe and in the ancient Near East. Yet, context and places of depositions are entirely different. While in the European tradition, remote places near water bodies are preferred, metal objects in the Near East were predominantly deposited within ritual spaces, buildings or real sanctuaries. The Caucasus mountain range is the border between both traditions. This presentation will focus on the different ritual environments of hoarding in Caucasian Bronze Age, on the different locations of ritual places – off-site hoards or sanctuaries, and on the different historical trajectories that led Caucasian people to this specific ritual practice.

Non-burial metalwork depositions in Bronze Age China- a case study of the Shang

Author - Qin, Cao, Oxford, United Kingdom (Presenting author)
Keywords: Bronze Age, China, metalwork

Presentation Preference - Oral

Numerous bronze items, mainly vessels and weapons, have been recovered from Bronze Age (c.1600-500 B.C.) tombs in China, and such mortuary contexts have always been the focus of research. Though not as well attested archaeologically, comparative metalwork was also deposited in non-burial contexts such as sacrificial pits, building foundations, and ‘hoards’. The implications of these depositional phenomena have not been holistically explored. In this paper, I will discuss metalwork depositions during the Shang (c.1600-1050 BC, Middle Bronze Age) in the Central Plains. Questions to be investigated include: what are the variety of depositional contexts for ‘giving up’ metalwork? What compositions of objects were deposited? Can any chronological patterns be discerned? What were the intentions of the depositories and the significance of the deposits to the Shang?

Selective deposition due to ritual intentions has in the last years been identified as a key-concept governing the formation of Bronze Age metalwork assemblages. Especially in regions like the Carpathian Basin, where the transmission of metalwork depends heavily on deliberate decisions on the inclusion of certain object classes in hoards and the exclusion of others, severe repercussions for the interpretability of the archaeological record can be expected. Although widely accepted on a theoretical level, until now the full consequences of selective deposition have not been explored for the southeastern European Bronze Age archaeological record. The present contribution aims to highlight the far-reaching implications of presuming ‘purposive’ choices for dating the earliest appearance of object groups and technological innovations, using the earliest appearance of socketed axes in southeastern Europe as a case study. Socketed axes seem to appear all at once in a hoarding horizon parallelized with the central European phase B1 D. It is argued that selective non-deposition of socketed axes and deposition of their pre-Late Bronze Age variants, which however can be reconstructed by taking into account other sources than hoard finds. The transmission of settlement finds is governed by a different set of rules and can serve as a corrective for a more balanced view on the development of Bronze Age metalwork. Isolated instances of early settlement contexts for finished objects, but even more so evidence for casting equipment discarded after use make a much earlier start of production of socketed axes in southeastern Europe probable.

The middle Bronze Age necropolis in Gllareva-the Mycenaean influence in Kosovo

Author - Prof. Luci, Kemajl, Museum of Kosova, Pristina, Kosova (Presenting author)
Keywords: Necropolis, The middle Bronze Age, the Mycenaean influence in Kosovo

Presentation Preference - Poster

Kosova’s favorable geographic position in the central Balkans has enabled its connection with neighboring and farter territories, thus making the influence of various cultures possible from the earliest periods. The development of early prehistoric cultures in Kosova has been sufficiently explored through systematic work. Nonetheless, there is insufficient knowledge on the development of the Bronze Age in Kosova. With the finding and excavation of the necropolis in Gllareva, important new steps have been made to complete this gap. Excavations in Gllareva have provided the most precise data for solving important problems of the Bronze Age in Kosova, as well as for the development of period as a whole. Two necropoleis have been identified marked as Gllareva I and II. Both can be dated to the XV and XIV centuries BCE. So far, 48 grave constructions have been found, consisting of two types of burial practices: inhumation and cremation. Regarding the analogies and chronological determinations of the bi-ritual burial practices it is possible to conclude that inhumation, with or without stone constructions, is the older type of burial. The task of dating the graves with cremation was conducted through reference to urn fragments, specifically their handles, which can be placed in a broader time frame. Dating the graves with inhumation can be done through reference to the other numerous finds, some of which have analogies in the larger geographical region, such as jewelry, weapons, and ceramics. The cultural material also, which is quite exclusive and in particular the weaponry, attests to the high degree of knowledge of metal manufacture, production techniques, as well as decoration. The Gllareva necropolis shows that the Middle Bronze Age in Kosova had a developed culture with significant influences from, and ties to, Mycenae, as an important social, economic, and political center. Swords, axes, and various types of knives point to the connections with production centers in Epirus and Albania from where the Mycenaean influence expanded through the Drin valley and Vardar basin. Excavations in Gllareva have also given evidence to the beginnings of a stratified society in the area, the formation of a ruling class, and the formation of the Illyrian Dardan “tribe” in the Central Balkans. Thusly, the Bronze Age in Kosova becomes and important stage in the formation and development of Illyro-Balkan peoples, their culture and organization.

Their further development can be observed in the course of the following periods, specifically the Early and Late Iron Age in the first millennium BCE.

Multiiessential” concept in Early Iron Age offering contexts of Central Asia

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Keywords: Central Asia, Early Iron Age, oferings

Presentation Preference - Poster

“Multiiessential” concept is a model of ancient population worldview. It was build basing on Iron Age archaeological sources from Central Asia, especially on so-called “offering” contexts.
UNDER THE RAISED ROOF: CREATING THE SPACE FOR FAMILY AND COMMUNITY

Friday, 2 September 2016, 16:00-16:30
Faculty of History, Room 330

Author: Dr. Piccione, Paola, Rome, Italy
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Keywords: Anatolia, Early Bronze Age, Household archaeology
Presentation Preference: Oral

This paper presents a simple strategy to establish a more solid argumentation for interpreting archaeological building remains. It is argued that we should not move away from classic groundplan typologies, as some archaeologists suggest, but neither should we lower our expectations when it comes to interpreting these plans in economic, socio-political or ideological terms. This is because we elaborate on well-established research strategies in such a way that we can support each other; in Trebscho (2009, 515) puts it: "Contextual analyses should always proceed from better-documented interpretations." In order to really understand ancient building traditions, information on the use and technicalities of built structures will have to be analyzed from a methodological 'building blocks', as a means of closing the gap between 'description and interpretation'.

It will be demonstrated that the concept of a ‘functional typology’ can provide a framework for systematically building up a well-founded, yet holistic view of excavated ground-plans. The key objective in setting up a functional typology is to analyse and explain how ancient buildings functioned in their various respects. Starting as objectively as possible, the level of interpretation gradually increases to a total of five steps: 1) typological analysis, 2) functional use analysis, 3) technical analysis, 4) reconstruction and 5) contextualisation.

The basis for this methodology was recently outlined and tested during the research of early medieval buildings in the north of the Netherlands. Buildings remain previously unethnised in the Holocene clay and past area have shown that a lot more information can be gathered from ground-plans than excavations in the sandy soils have so far suggested. Using early medieval turfed buildings with cruck-like trusses as an example, it is argued that a structural approach (cf. steps 3 and 4) is essential for in-depth research of ancient buildings.


TH1-08 Abstract 02

Builds hand a house but what makes a home?

Populating space in an Anatolian Early Bronze Age village

Author: - M.A. Postma, Daniël, Groningen Institute of Archaeology, Lelystad, Netherlands (Presenting author)
Co-author(s): - Winger, Katja, Freie Universität Berlin, Institut für Prähistorische Archäologie, Berlin, Germany
Keywords: building, reconstruction, timber
Presentation Preference: Regular session

In this paper we present the case of a wholly preserved agro-pastoral village in the highlands of eastern Anatolia, 900 metres above sea level, dated 2900-2750 BCE (Early Bronze Age). Built over several centuries, the building from 2015 was first researched by Walter Schmid in the beginning of the 20th century and later by Claus Dobiat, who excavated search-trenches in the area. A highlight was an almost completely preserved fire dog of a half moon shape, its remains are very well preserved and we have got the opportunity to get a first insight into the usage of interior space under the roof. Since the building burned down, collapsed and no further buildings were erected on its remains, its remains are very well preserved and we have got the opportunity to get a first insight into the usage of interior space under the roof. We seek a discussion on the archaeological evidence and the reconstructions of those buildings, and how to maintain a sense of academic objectivity throughout the research process. Perhaps an even more ambitious question: through credible architectural reconstructions and our understanding of past home spaces, can we inspire the design and community life of the future?
context of known settlement remains in the south-eastern Alpine space. The emphasis will be put on the architecture, organization of space and combined with the GIS and LIDAR analysis of the settlement area and its surrounding.

**TH1-08 Abstract 04**

Creating a home. Ritual practice related to houses in a terp settlement in the northern Netherlands

**Author:** Dr. Nieuwhof, Annat, University of Groningen, De Punt, Netherlands (Presenting author)

**Keywords:** human remains, Northern Netherlands, Ritual practice

**Presentation Preference:** Oral

Between 1923 and 1934, excavations were carried out in the terp settlement of Ezinge by one of the founding fathers of Dutch archaeology, A.E. van Giffen. Ezinge is located in the coastal area of the northern Netherlands, a former salt marsh area. It is one of many terps that are found in this region: artificial dwelling mounds, which once protected their residents against floods. A terp started with one or several houses built on separate platforms, which clustered as they were heightened, developing into single large mounds. The terp of Ezinge ultimately reached a height of 5.5 m and covered 16 ha, about 10% of which was archaeologically excavated in 22 layers.

Ezinge became famous because of the well-preserved remains of 85 longhouses, dating from the 5th century BC until the early middle ages. The lower parts of wooden buildings often were still preserved in situ, revealing the structure of these 3-aisled, two-partite houses with built-in byres.

Excellent preservation, also of pottery and bone, enabled not only a thorough investigation of the material culture, but also of ritual practice in this settlement. This investigation was carried out only recently, between 2011 and 2015.

This paper will present some of the results of the study of ritual practice. It will discuss the ways in which rituals were related to various stages of the lifecycle of a house: raising the house platform, building the house, living in it and finally abandoning the house. A conspicuous element of ritual practice was the burial of human remains in and near houses. It will be argued that burying the remains of deceased family members created ancestral grounds and also made people feel at home. Single inhumations and single bones (probably the remainders of the dead which were collected after a process of excarnation) were both used that way.

Ritual practice associated with houses changed over time. It was influenced by internal developments, especially population growth, which caused changes in the layout of the settlement and competition for the available space on the terp.

**TH1-08 Abstract 05**

Construction, function and interior design of sunken floor huts in Middle Eastern Sweden

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**Keywords:** Building construction, Sunken floor hut, Viking age

**Presentation Preference:** Oral

During the last few years some Vendel and Viking age settlements with a large number of pit-houses (sunken floor huts, ground-floor rooms etc) have been excavated in Middle Eastern Sweden.

Due to their construction the sunken floor huts are very well preserved and contains a lot of information of construction, building materials and interior details such as, steps, benches, ovens etc. Often the floor layer is intact and finds made from this layer can give useful information about what action actually took place within the walls.

Questions to dwell upon is how the inhabitants found themselves within these really small damp, constructions, some researchers have argued that these buildings must have been almost unbearable to endure and others think they were inhabited by ghosts. The question is, have they been lived in at all or have they been a place for daytime occupations and handicraft mainly? How can these types of buildings be understood? We think that most important is to find out what actually took place within the four walls.

The paper will present a study upon the placement of entrances, building material and construction details. The houses within the study shows a great variation concerning construction and interior design details such as ovens, benches, looms, etc. Another study deals with what activities that has taken place in the pit-houses. Arceobotanical analysis combined with osteology and taphonomic analysis have helped us reach further in our interpretations.

Finally we will look further into how architectural reconstructions actually can be useful when interpreting the archaeological record.
TH1-08 Abstract 09

At the hearth. Daily life, and domestic architecture in Early Iron Age farmsteads of Western Denmark

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Keywords: Domestic activities, Iron Age, Settlement Archaeology
Presentation Preference - Oral

This paper will discuss the evidence of domestic activities in the Early Iron Age (500 BC - 150 AD) farmsteads of Western Denmark. The Danish evidence of daily life and domestic activities can roughly be divided into two: Evidence from well-preserved settlements with preserved cultural layers excavated in the 1920s to 1950s and evidence retrieved from settlements leveled out below modern day plough soil. The former has the advantage of in situ evidence of daily activities on the preserved floors while the later mainly benefits from the large amount of completely excavated farmsteads and macrofossil - as well as geochemical evidence collected on settlement excavations in the last 20 years.

By combining the two types of evidence, it is possible to establish a generalised picture of the development of domestic activities. The longhouse is throughout the Iron Age at the heart of domestic life with evidence of food-processing, storage as well as stabling livestock. However, during the Early Iron Age some activities, both specialized crafts and to some extent food preparation are moved into nearby outbuildings and the fenced of interior of the farmyard as the farmsteads grow in size. During the period under consideration the Reepan of individual houses is prolonged, the number of burials in connection to individual farms increases, as do the number of viable deposits found within the longhouses. Within the farmsteads of the later part of the Early Iron Age we find architectural traits such as stone paved entranceways, decorated hearths and fenced of farmyards. Individual households may through a more elaborate use of these architectural traits and viable deposits have created a sense of homeliness and interconnectedness between the house and the household member. Though these developments at the same time set individual households apart from other households in the growing village communities by stipulating social differences.

Thus the study of daily life in the Danish Iron Age houses and farmsteads is a study of practicalities, ideology and the basic segments of Iron Age society.

TH1-08 Abstract 10

Charting the microstratigraphic life-cycle of an early Roman urban property, Roman Silchester, UK

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Keywords: Architecture, Soil Micromorphology, Urbanism
Presentation Preference - Oral

In Roman Britain, domestic urban properties are dynamic spaces with constantly evolving architectural forms. The evidence for super-structure components can often be ephemeral as these properties have timber or earthen walls, which are frequently subject to decay after the abandonment of the buildings. Previous research at Silchester has integrated thin-section micromorphology and experimental archaeology to characterise sediments and occupation deposits to identify doorways roofed, semi-roofed, and open spaces within the properties in order to understand their architectural form.

Building on previous research, this paper will chart, using a microstratigraphic approach, the evolution of a dynamic property, early Roman timber building B, which stood from the period immediately after the Roman conquest (A.D. 43) until c. A.D. 125/50. By the end of the life of this property, it had taken on an interesting architectural form comprising a ‘zigzagged’ frontage abutting the north-south road, and had become poorly maintained with in situ evidence for metalworking activities. Micromorphology has demonstrated that in its earlier phases, the entrance way to the building had moved several times. There is also evidence for hearth floors, and the division of spaces. Earlier uses of this property may include the manufacture of glass, food storage and workshops; the later use, however, seems to have involved timber and metalworking activities.

TH1-08 Abstract 11

Understanding household activities: an examination of two Medieval dwellings in Atlantic Scotland

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Co-author(s) - Dr. Dempsey, Karen, Dublin, Ireland (Presenting author)
Co-author(s) - Dr. Magureanu, Andrei Mircea, Institute of Archaeology Vasile Parvan, Bucharest, Romania (Presenting author)
Co-author(s) - Cluicercig, Bogdan, History and Archaeology Fauraha County Museum, Ploiești, Romania

Keywords: early middle age, family space, community space, house, settlement
Presentation Preference - Oral

In this paper we want to explore the organisation of space in two houses excavated in the Western Isles of Scotland. One dates to the late 11th century the other to the late 13th century AD. We provide the opportunity to explore change across a major political division; the transfer of political power from Norway to Scotland.

An understanding of the use of these houses can be explored by an examination of the architectural changes but more importantly by the substantial assemblage of material present in the house floors. The contrast between the communal organisation and material richness of the Norse house and the poverty and partitioned spaces of the Scottish house are dramatic and give us a good indication into the social significance of domestic space in the North Atlantic region.

TH1-08 Abstract 12

‘Private’ spaces???... Reconstructing the ‘living-rooms’ of medieval castles

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Keywords: Medieval Castles, Reconstruction, Social Space
Presentation Preference - Oral

During the thirteenth century, the hall and chamber were typically separate structures within castles complexes in Ireland and Britain. Careful examination of the architecture of medieval chambers - understood as ‘private’ spaces - has revealed that their first-floor spaces appear to have been divided into ‘rooms’ most likely using partitions comprised of timber and/or textiles. Some castles have very tangible indications of divisions such as masonry corbels that once supported wooden partitions. Many other internal divisions, though now lost, have left significant indicators of their former presence, such as the arrangement of windows; grouped together or obviously spaced apart which indicated a deliberate spatial organisation that allowed for the placement of internal divisions or even furniture. Further clues for partitions are evident in the arrangement of certain internal features, such as the grouping of latrines and fireplaces together at one end of the chamber away from the main entrance. We can also see that the latrine was typically situated in the furthest corner angle from the main entrance (diagnosis opposed) or directly opposed suggesting that either the doorway or the latrine (or both) may have been screened from view.

Interestingly, the latrine was always placed on the cold north side whereas main entrance faced south indicating that heat and light (or its absence) played a major role in their choices of interior design.

Does the arrangement of spaces inform us of the social practices of the medieval world? Or are we transposing modern interpretations of ‘public’ and ‘private’ on the past? This paper demonstrates how we can read the ‘space syntax’ of these buildings to inform us of how these ‘rooms’ may have acted in the past and how their inhabitants behaved within these spaces.

Futhermore it raises questions about how the modern concepts of ‘public’ and ‘private’ may obscure our objectivity in understanding these buildings. In reconstituting the interior spaces of these buildings we must be mindful that only certain elements survive, live the tantalising gaps which we must ‘reconstruct’ whilst remaining open to the idea that these spaces were ultimately occupied by people - the households - who made choices about how to use and live in them (within the constraints of their traditions).

TH1-08 Abstract 13

Family space vs. community space from the perspective of settlements from the Lower Danube Region

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Keywords: early middle age, family space, community space, house, settlement
Presentation Preference - Oral

The archaeological discoveries from 5th-10th centuries from the Lower Danube Region are numerous enough to sustain a discussion about what is family space and what can be considered the community space. This discussion is based on two concepts: house and settlement/village.

The problem is what can we interpret as a house and what we can consider a settlement. Generally, the archaeological reports described only similar constructed structure, settlements from this time frame seeming to be monotonous and against a discussion like that we intend to provoke.

But, in fact, discussions like: how can we identify a house? what are the arguments for/ what is the inhabited space? (it is only the pit in the cases of sunken building; what are the meanings of the objects discovered into the architectural structure and
how those can help us to understand the family space? can we definitely separate this space from the community one? where those spaces interact and where those are divergent, if they are? architectural differences between the structures of the same village can suggest that some parts are different spaces? are still important and, in our paper, we intend to propose some possible responses.

TH1A-08 Abstract 14
Beyond the cone: possibilities for exuberant buildings
Author - McCaughey, Rodney, Historic Environment Scotland, Edinburgh, United Kingdom (Presenting author)
Keywords: architecture, evidence, reconstruction
Presentation Preference - Oral
Taking inspiration from the recent discovery of “painted” walls on Neolithic buildings at two sites in Orkney, this paper argues that buildings could be “traditional” and functional but on occasion, exuberant. A casual view of the reconstructed architecture of the TH1, would reveal an image different from the conventional, would see an homogenous dominion of the conical roof. This may represent the best fit of technology to need and circumstance but in many other aspects of life, seen through preserved architectural fragments, we can see an exuberance of design and masterful display of skill.
From the ornate gelled hair-style of the bog-body from Clonycavan to metalwork masterpieces such as the Munymusk casket, and to ornate scripture, such as Forteviot arch, we have evidence that in some circumstances, builders, designers and crafts people stepped far beyond what merely practicality demanded to create visually stunning artefacts. By presenting examples of buildings that seem to depart from the norm and that express a spirit of experimentalism, such as the early Christian church at Whithorn, this paper will seek to stimulate a discussion on how architectural practice needs to be more sensitive to the possibility for evidence of fantastic design and culture in the architectures of the past.

TH1A-08 Abstract 15
Reconstruction of Neolithic dwellings. On to the materials of North-West Russia (Smolensk region)
Author - Khristalyeva, Irina, The State Hermitage museum, Saint-Petersburg, Russian Federation (Presenting author)
Keywords: Dwellings, Graphic reconstruction, Neolithic
Presentation Preference - Poster
Long-term settlements of ancient people are one of the most interesting categories of archaeological sites. The various aspects of the material and spiritual life of the ancient groups are recorded in settlements - their relationship with the environment, productive activities, social status, spiritual culture.
The main function of settlements and dwellings is to create the necessary enclosed space, protecting people from the harmful effects of natural and social environment. This is related to topography of settlements, presence of fortifications, orientation of dwellings, and their connection with the water and the prevailing winds, the presence of drainage ditches, etc. The same aspects dictated appropriate technical solutions in the construction of dwellings. Questions of the protection of people from the cold, damp, heat, and questions of the positions of fire and cooking places were decided taking into account the environmental conditions. Various building materials were used depending on natural conditions and resource availability.
The appearance of settlements and dwellings largely determined by the type of economy. This involves determining number of inhabitants of the settlement and each dwelling, the location of settlements in places that were convenient for fishing, the necessary raw material production (stone, flint, clay, etc.), hunting, grazing, etc. This also explains the functional differentiation of settlement components (settlements of fishermen, hunting camp, etc.) and buildings (household, living and industrial). In addition, domestic production activities (ceramic production, bone and stone processing) proceeded in a living area.
Finally, the nature, the layout, the size of settlements and dwellings, details of interior depended on the social and demographic factors: the level of development, the structure and number of communities.
Identification and justification of the constructions remains on the archaeological site is a difficult goal to achieve; it’s necessary to define the features that can distinguish the remains of objects. The first feature includes structures which can be defined as area of the cultural layer different from the surrounding space. The differences may be in color of the cultural layer, in the presence of bone, stone, wood remains or decay laying in an order; remains of hearths and fireplaces. Specific set of tools can be an indicator of unprocessed construction in some cases. But it’s necessary to remember that a dark spot of the cultural layer was created due to the process of burial, not decay of the remains of objects.
Multi-layer settlements of the Smolensk region of North-West Russia contain the remains of dwellings revealed due reworked floors (if any) or due the posts and postholes and their strengthening structures (stones), as well as the remains of hearths. These data, when attracting archaeological and ethnographic analogies, allow reconstructing in general the ancient dwellings and the structure of the settlements themselves.

TH1A-09 Abstract 01
Investigation of glass objects from Dodona Sanctuary, Epirus, Greece: an interdisciplinary approach
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Co-author(s) - Henderson, Julian, University of Nottingham, Nottingham, United Kingdom
Keywords: Ephes, Greece, Hallenuic glass, scientific techniques
Presentation Preference - Oral
Dodona Sanctuary was the major religious centre of north-west Greece, in the Epirus region, connected with the cult of Zeus Dodonaios and his wife Dione. According to ancient Greek tradition it is considered to be the oldest oracle in ancient Greek world. Archaeological evidence has confirmed continuous habitation from the Bronze Age (2800-1100 BC) to the end of the 4th c. AD. The Dodona Sanctuary flourished during the Hellenistic period and especially during the reign of King Pyrrhus when major reconstruction works took place. The Dodona Sanctuary played an important role as a political, administrative and religious centre during that period and its relationship with regions outside Greece, like Alexandria in Egypt, is well attested both archaeologically and historically. Our presentation will focus on glass found in the excavations of Prytanion and Vouloukion which were the major public buildings at the Dodona Sanctuary.
Our primary research objectives are: (1) to suggest the raw materials used to make the glasses; (2) identify any compositional contrasts between middle and late Hellenistic glass; (3) to suggest a provenance for the glass by comparing our results with other published datasets - especially whether compositions suggest both a Levantine and a non-Levantine provenances.
Here we present results form 40 samples that we have analysed using SEM/EDX and LA-ICPMS analysis. The assemblages from which samples were taken consists of fragments of various vessel types (cone formed vessels, ribbed bowls, cast bowls, cone-encrusted bowls) of a variety of colours (deep blue, green, amber, colours).
According to the chemical analyses, the glass from Dodona is a typical soda-lime-silica type with added mineral saters (sodium) as a flux. Its chemical compositions are homogeneous. Small differences in various major, minor and trace elements between individual samples suggest the use of different types of raw materials and also different production zones. A comparison of these glass chemical compositions with contemporary glass artifacts thus gives new insights into the production and distribution of glass used in Greek regions during the Hellenistic period.
An Eye for an Eye Bead: Early Iron Age Glass from Lika, Croatia

Author - Franjić, Ana, University College London, London, United Kingdom (Presenting author)
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Keywords: Croatia, glass beads, technology
Presentation Preference - Oral

The results of an archaeological investigation of Early Iron Age glass beads from Lika, Croatia are presented. A distinct type of opaque blue bead, decorated with yellow concentric circles, or “eyes”, was widespread on the territory of the lapočes, an Iron Age group inhabiting the area from Central Croatia to the Una river valley in Bosnia and Herzegovina.

So far, lapoč bead culture has been studied in the cultural-historical manner, with the focus predominantly on chronology and typology. Production, technological networks and glass use have received little discussion apart from conjectures that these beads must have been of local production due to their perceived basic production requirements, their abundance in various areas, and to analogous productions in the neighbouring regions. This study builds on the typological analysis (and a few AAS measurements by Braun in 1983), tests the hypothesis of local production, and evaluates prior conclusions about the manufacturing conditions of 43 sampled beads by looking into their chemical composition with SEM-EDS and EPMA instruments. The study shows how archaeometry can assist in providing a clearer picture of prehistoric production, use and trade of prestige materials. The prior hypothesis about the vitreous material is largely disproved: rather than being glass paste, the beads are in fact a transitional phase between glass and faience, and the yellow decoration is not painted on but made of true glass.

The two types of glass, and the raw materials used for their production, are very different: the yellow glass is probably imported as ingot, while the cobalt blue possibly indeed locally produced. Furthermore, the archaeological context allows a discussion of the beads’ meaning and use. Their distinct appearance was intentional, possibly in order to reinforce the identities of the lapoč group. Although the lapoč were importing glass from their well-known glass-producing neighbours of the Lower Carniola group, they still held on to this particular type of bead.

Additionally, these beads predominantly appear in female burials, possibly signifying a certain ascribed or achieved status of these women within the lapočan society, which sheds light on the existing female social roles in the Iron Age.

Bibliography:

Prehistoric Glass from Iron Age Segestica (Present-Day Croatia)

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Co-author(s) - Franjić, Ana, UCL, London, United Kingdom
Keywords: archaeometry, glass objects, Iron Age
Presentation Preference - Oral

Owing to its prominent position at the crossroads of Pannonia, eastern Adriatic coast, northern Italy, south-eastern Alps and the Danube, the Segestica settlement, located at the mouth of the Kupa and Sava rivers in Central Croatia, became an important trade nexus in the Early Iron Age.

This is archaeologically attested by the abundance of imported objects appearing at the site at this time, such as bronze vessels, weapons, horse gear, dress ornaments, and glass items. If compared to chronologically contemporary groups - the lapočes in Lika, Croatia, and the Lower Carniola group in Slovenia (which is also a possible glass production centre) - whose cemeteries have a high concentration of glass finds, frequency of glass items retrieved from Segestica seems scarce: twenty five beads and four bracelets. This is largely due to the fact that no Iron Age graves in Segestica have yet been found. Most of the glass items were retrieved during the dredging of the river Kupa at the beginning of the twentieth century, leaving them without a clear archaeological context. Only a few cobalt-blue glass beads have been properly documented in their context during the 2015 excavation of the Pogonaci site, situated at the right bank of the river.

The glass artefacts will be presented according to their typological and chronological parameters, and manufacturing techniques. In order to gain further insight into the use and trade of prehistoric glass in Slak, and, more generally, into the technological traditions of glass-making in the Iron Age period, the items were also analyzed using SEM-EDS. The results of the chemical analysis of various types of beads (stratified eye beads, globular translucent light green beads, dark opaque beads with linear decoration, barrel-shaped and conical cone-shaped beads with protruding decoration, blue globular beads with wavy linear decoration) and bracelets (all blue in colour, but of various shapes: smooth D cross-section, with three ribs, with five ribs – the motif being the most prominent) will also be presented and interpreted.

The quantitative analysis focused on the possible difference in raw materials, technological recipes, and craft traditions of the (chronologically and culturally) distinct artefacts, in order to look at the variability in glass production and relationship between the various bead groups dated to Early (Hallstatt) as opposed to the Late (La Tène) Iron Age, as well as the differences in the chemical compositions of glass beads and bracelets. Bracelets appear in this area around the third century BCE and are connected with the arrival of Celtic groups, which could potentially signify a different technological knowledge and tradition. The results of the analysis shed light on the processes of the transfer of knowledge and perpetuation of glass making traditions, adding to the more comprehensive knowledge of the prehistoric glass use and trade in continental Europe.
I would like to present the results of an analytical program of La Tène Glass characterization conducted on more than seven hundred glass objects from 32 different settlements of France, using Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICP-MS) with the collaboration of Bernard Gratouze. We had the possibility to study the important collections of Latarra (Hérault), Bobigny (Seine-Saint-Denis), Toulouse (Haute Garonne) and a part of the large glass deposit of Mathay-Mandeure (Doubs). The study has also been conducted on 40 raw glass fragments from 3 shipwrecks sank between the third century and the end of the second century B.C. One of these raw glass fragment was recast on a wood fire oven with through collaboration and the authorization of French ministry of culture and direction of underwater and submarine research, (D.R.A.S.M.). Glass bracelets were produced. It gives an experimental framework to this analytical study to observe the potential changes of glass compositions during its recast.

This experimental and analytical work allows us to observe evolutions of glass recipes during the second Iron Age. It's give news clues on the organization of raw glass productions. The objective of this communication is to share this result in order to provide a discussion with European projects on La Tène glass characterization.

TH1-09 Abstract 09
Romano-British glass bracelets: where La Tène Continental technology meets Iron-Age British design
Author - Dr. Ivela, Talliana, Newcastle University, Newcastle upon Tyne, United Kingdom (Presenting author)
Keywords: glass bracelets, Iron Age technique, Roman Britain
Presentation Preference - Oral

The aim of this paper is to bring the Romano-British glass bracelets into the discussion of the Iron Age Continental glass bracelets. The paper suggests that the British glass bracelets were Romanperiod British development of an existing Continental La Tène skill. Romano-British glass bracelets have primarily been studied from the regional perspective. Earlier research into the distribution and typology of British glass bracelets suggested that British examples started out in Continental glass production technique compared to bracelets made on the Continent. The start of the production of the seamless glass annulars in Britain corresponds with the decrease in the circulation of these glass adornments on the Continent. In the late first century BC, the Continental glass bracelets gradually stopped being produced, yet the craft reappeared in Britain, which had no history of glass bracelets’ production prior to the Roman invasion of Britain in AD 43. The presentation attempts to answer the question as to where the inspiration and skills for the British glass bracelets came from by discussing their production technique.

The experiments conducted with the modern glassmakers and the close inspection of the British glass bracelet fragments reveal that the British annulars were mostly produced in the similar manner as some of the La Tène Continental bracelet types, that is in a technique similar to that suggested by Joelle Rolland for some Continental types. However, the design of the British bracelets is rather different from the Continental ones. Most British annulars have either twisted cord decorations or tails with curved terminals. A convincing hypothesis was put forward by the earlier scholars that the design of some British bracelet types is likely to be closely related to, or may well have been developed from, the British insular Iron-Age beads.

The paper presents, therefore, a case-study for the interaction between craftpeople of various communities regarding the production and development of the British glass bracelets. It suggests that La Tène glass bracelet craft and technology continued well into the Roman times, contesting the common opinion that the Iron Age production of the seamless glass bracelets was interrupted at the turn of the first century AD.

TH1-09 Abstract 10
An inorganic material ‘culture clash’: ‘sealing wax’ red glass in Late Iron Age Britain
Author - Dr. Davis, Mary, National Museum Wales, Cardiff, United Kingdom (Presenting author)
Keywords: Britain, glass, Late Iron Age
Presentation Preference - Oral

This paper will present work carried out on the analysis of Insular Late La Tène and Early Romano-British ‘sealing wax’ red glass. This was used principally as an inlay on high status decorative bronze work, which developed from the earlier La Tène traditions in both Europe and Britain of using opaque red ‘sealing wax’ glass to decorate metal artefacts. In Late Iron Age Britain (1st century AD), the use of inlaid red glass flourished on objects exhibiting ‘Celtic’ styles and from regions in Britain resistant to Roman occupation. The quantity of this type of material produced was also significantly greater than in previous periods. During the first century AD, in much of the Romanised world, the composition of red glass changed significantly from the high lead high copper ‘sealing wax’ type used in the Middle Iron Age and Continental La Tène pieces to the use of low lead, low copper red glass produced for Roman mosaics and probably exported as tesserae or rods. However, within Britain the use of ‘sealing wax’ red glass was retained, but was of a slightly altered composition to the majority used within the ‘Celtic’ world; one principle difference was a significant increase in antimony. Although not used for previous La Tène glass, there are a few examples of similar high antimony ‘sealing wax’ red glasses noted within the southern Mediterranean as re-used glass vessel fragments in early mosaics in ‘nymphaea’ in southern Italy, in Mithraic red glass and in red glass from Jerusalem.

Antimony was used in small quantities as a decolourant in clear glass; its addition in larger quantities in ‘sealing wax’ red glass was advantageous in several ways: it replicated iron as an internal reducing agent, produced a brighter red colour, and acted as a fining agent. However, antimony ores are relatively rare in Britain, and there is no evidence these were exploited.

Conversely, antimony was available in the form of lead antimonite, for which there were ancient and extensive trade networks. This was used as a yellow pigment and a colourant in glass. Yellow beads from the Middle and Late Iron Age in Britain were usually coloured using lead antimonite, and tesserae continued to be coloured with this well into the Romano-British period.

One hypothesis for the prevalence of this distinctive composition of red glass in Britain is that yellow glass was converted to red by the addition of copper (and lead); metals readily available in Britain. If yellow glass is heated, lead and antimony can combine; the subsequent addition of copper (and lead), plus careful cooling in reducing conditions, could result in the production of red glass. This would account for the levels of antimony in Late Iron Age British red glass, for the change in technology, and for the increase in the use of red inlays. Theoretical amounts of copper and lead can be added to the composition of analysed yellow glass to achieve results similar to those of analysed red sealing wax glass from Britain.

TH1-09 Abstract 08
The Irish Glass Togge: Exploring the function of an enigmatic Iron Age ornament
Author - Jordan, Alexis, University of Wisconsin-Milwaukee, Milwaukee, United States of America (Presenting author)
Keywords: glass, Ireland, Iron Age
Presentation Preference - Oral

The study of personal ornaments in the European Iron Age has long been a fruitful avenue of research for archaeologists wishing to explore topics such as social status, identity, technology, and trade. As portable pieces that can be reliably sourced and dated, beads reflect larger patterns of social interaction and communication especially during periods characterized by significant change and increasing mobility. In the Irish Iron Age, the systematic study of artefact types has raised new questions regarding intercultural contacts and indigenous craft production on the island. This paper will focus on glass toggle ornaments, often described as dumbbells, which have typically been categorized as a glass bead form although they lack the designating perforation. Few in number and appearing almost exclusively in Ireland, Irish glass toggles span mortuary, ceremonial, and settlement sites across the island. The glass toggles vary in shape and color, and bone and amber examples are known. Through an examination of emergent patterns within the site types, associated artefact assemblages, spatial and temporal distribution, and stylistic variability of the toggle, an analysis of the potential functions and archaeological significance of this enigmatic personal ornament will be explored.

TH1-09 Abstract 07
Raw The role of glass bangles in Late Iron Age society in central Britain.
Author - Dr. Bruhn, James, Historic Environment Scotland, Edinburgh, United Kingdom (Presenting author)
Keywords: glass bangle, Iron Age Scotland, Iron Age society
Presentation Preference - Oral

One of the most ubiquitous objects found on Late Iron Age sites in southern Scotland and northeast England are glass bangles. These objects have largely been studied in isolation in Scotland, devoid from comparison with their continental equivalents. This paper will describe the history of Scottish glass bangle studies. It will then review glass bangles in a British context and how they relate to their continental equivalents. To address their role in Late Iron Age society in Scotland, the paper will focus on the large collection of bangles from Traprain Law, an Iron Age Oppidum, and how this collection of objects compares to the wider distribution pattern of bangles in southern Scotland. It will argue that these glass bangles offer an important insight into understanding the complex negotiation of identity occurring on the Northern Frontier of Roman Britain in the Late Iron Age. Glass bangles became a way for the indigenous communities to promote their local importance by displaying their connections with larger social networks. By transforming imported foreign material, in the form of both raw and reused glass from Roman sources, into items that catered for local tastes, bangles became a powerful symbol. The glass bangles highlighted a connection to Rome but also acted as a statement of the indigenous populations desire to shape and mould that relationship in a way that was locally beneficial.

TH1-09 Abstract 10
An inorganic material ‘culture clash’: ‘sealing wax’ red glass in Late Iron Age Britain
Author - Dr. Davis, Mary, National Museum Wales, Cardiff, United Kingdom (Presenting author)
Keywords: Britain, glass, Late Iron Age
Presentation Preference - Oral

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One hypothesis for the prevalence of this distinctive composition of red glass in Britain is that yellow glass was converted to red by the addition of copper (and lead); metals readily available in Britain. If yellow glass is heated, lead and antimony can combine; the subsequent addition of copper (and lead), plus careful cooling in reducing conditions, could result in the production of red glass. This would account for the levels of antimony in Late Iron Age British red glass, for the change in technology, and for the increase in the use of red inlays. Theoretical amounts of copper and lead can be added to the composition of analysed yellow glass to achieve results similar to those of analysed red sealing wax glass from Britain.
Sandwich gold-glass: elitist glass production in Hellenistic Mediterranean

Author - Cesarein, Giulia, Universität zu Köln - Archäologisches Institut, Cologne, Germany.

Keywords: Hellenistic glass, Mediterranean, Sandwich gold-glass

Presentation Preference - Poster

Sandwich gold-glass is a particular technique, employed between the 3rd and the 2nd century BCE to produce some of the most precious and rare glass bowls ever realized. This production is testified by about 20 specimens, which were found among Southern Italy, Rhodes, Anatolia, Syria-Palestine, Egypt, Mesopotamia, Black Sea, Caucasus...

The technique consists in assembling two colourless glass vessels (obtained by slumping, grinding and polishing), which fit perfectly one into the other. Between them, a gold-leaf decoration is sandwiched.

These artifacts belong to the so-called “Canosa Group”, which was attributed to Alexandria of Egypt and includes several glass techniques.

My interest in the Sandwich gold-glass production started with the purpose to define “Alexandrian glass”, strongly celebrated by the written sources. Through a preliminary investigation it was possible to understand that “Alexandrian glass” was an archaeological common place, still in the latest decades. The only group unanimously recognized as Alexandrian, though not basing on solid archaeological evidence, appeared to be the Sandwich gold-glass. This became the topic of my Master thesis in Classical Archaeology at the University of Padua (2012).

The study revealed also a great variety of gold-glass techniques, before and after this particular and limited production, from the second half of the 4th century BCE, and spread around the Mediterranean basin in the following ages.

The main aim of the project was to conduct a comprehensive analysis, combining different approaches, starting from the written sources. They constituted in fact the principal clue for an Alexandrian attribution (in particular Athenaeus of Naucratis).

An important step consisted in the creation of a catalogue, obtaining a clear and reliable morphological classification. The comparative analysis on morphology and decoration revealed a correlation among shapes (mostly hemispherical, ovoid or shallow bowls), technical details and subdivision of the decorated surface.

The decorative motives, mostly geometric and vegetal, were classified. Since they are widespread in the Mediterranean and beyond, they cannot provide significant help in localizing the workshops. Only the two specimens with figurative scene (a sacred landscape and a hunting scene) permit to lean toward Egypt.

The recognition of the workshops location on archaeological basis, also through the comparison with other contemporary productions (such as silverware, faience, pottery), remains difficult. Nevertheless, the presence of few highly specialized workshops in the Eastern Mediterranean basin (Alexandria, Aegaean, Syria-Palestine) seems the most reliable hypothesis. The particular lavishness and rarity of these vessels and their meaning as status-symbol allowed also an analysis of the socio-economical dynamics, related to the diffusion and consumption of these luxury items, expression of an extremely restricted elite.
Between the forest and the river: hunting and fishing in the Danube Gorges in the Mesolithic

Author - Zdravljic, Ivana, Laboratory for Bioarchaeology, Belgrade, Serbia (Presenting author)
Co-author(s) - Dimitrijevic, Vesna, Laboratory for Bioarchaeology, Belgrade, Serbia
Co-author(s) - Stefanovic, Sofija, Laboratory for Bioarchaeology, Belgrade, Serbia

Keywords: Fishing, Hunting, Mesolithic Danube Gorges

Presentation Preference - Oral

Ever since the discovery of the site of Lepenski Vir, it was recognized that fishing had an important role in the settlement of the Danube Gorges during the Mesolithic. The importance of wild game hunting has also been confirmed by the analyses of animal bones and emphasized ever since the first published archaeozoological reports. The issue of the role of terrestrial vs aquatic resources in the diet has been addressed from the perspective of stable isotope analysis, with somewhat contrasting results. The analyses of stable carbon (813C) and nitrogen (815N) isotope ratios have suggested that the Mesolithic inhabitants of the Danube Gorges consumed considerable amounts of fish, with gradual broadening of the dietary spectrum to include terrestrial resources at the onset of the Neolithic (Bonsall et al. 1997; 2000; 2004; Grupe et al. 2003; Bondi et al. 2004), whereas the analysis of sulphur (34S) has suggested that there were significant inter- and intra-site variations in dietary practices (Nehlich et al. 2010). However, this issue had not so far been addressed in greater detail from an archaeozoological perspective, mainly due to great difficulties and biases in cross-referencing quantified mammal and fish remains, but also due to the fragmentary nature of faunal assemblages from some of the sites. Although assessment of the precise proportion of wild game meat vs fish in the diet is elusive, particularly owing to the differences in mammalian and fish skeletons, and biases affecting their survival and recovery, we have attempted to address this issue by estimating their dietary contribution and nutritional potential on the basis of the sum of average weight of the minimum number of individuals for both mammals and fish. In addition, we estimated the proportion (size and number) of the economically most important fish (cyprinids, Wels catfish and acipenserids) in the assemblages from the three sites varied to some extent. Given the site locations, their short distance from one another and similar landscape and environmental conditions (vicinity of cataracts and large whirlpools), this propensity towards fishing particular kinds of fish could suggest that the sites functioned as specialized fishing centres, and held different species of fish in special regard.

The first study of the archaeozoological remains from Icoana was made 40 years ago by Alexandra Bolomey. The importance of this settlement led us to re-examine all the faunal material using methods such as slaughtering curves, ageing and sexing, biometry, cut marks, butchery patterns and palaeogenetics. This has resulted in a new interpretation of the local fauna and of Mesolithic hunting activities. All the remains are interpreted as food refuse, with high fragmentation ratios. The list of taxa identified includes molluscs (1 species), fishes (1), reptiles (1) and mammals (16). The assemblage is dominated (93.5%) by wild mammals, with over 4300 identifiable specimens. Sus scrofa (wild boar) dominates, followed by Cervus elaphus (red deer) and Capreolus capreolus (roe deer). By weight, deer remains are the most important, followed by wild boar. Other taxa represented are Ruprechtius nicipicus (chamois), Bos/Bison (aurochs/bison), Ursus arctos (brown bear), Canis lupus (red fox), Meles meles (European badger), Lutra lutra (European otter), Martes sp. (marten), Felis silvestris (wildcat), Lynx lynx (lynx), Castor fiber (European beaver), Lepus europaeus (European hare). The dog (Canis familiaris) is the only domestic mammal present in the site. Cut marks identified on the bones show that dog contributed to the food supply, which was also observed in the Mesolithic levels at Lepenski Vir, Vlasac and Padina.

The Mesolithic settlements in the Iron Gates have yielded rich assemblages of modified Sus scrofa canines, exemplified here by the site of Icoana (Romania). This raw material seems to represent, for Eastern Europe, a hallmark of Mesolithic. Indeed, during the Mesolithic, the number of pieces made of Sus scrofa canines decreased constantly, becoming sporadic during the Chalcolithic. The typological categories identified are scrapers, bevelled tools, combination tools and adorments. Debitage remains are also present, indicating on-site task processing. Boar task was readily available from the animals that were killed, and analysis of the fauna from these sites identified a large number of boar bones within the mammalian assemblage. Our study aimed to identify the transformation pattern both of the tooth and the functional marks, which could offer clues to the way in which the pieces were used. An experimental study was conducted, aimed both at the identification of transformational patterns of the tooth, and the presence of wear marks as possible functional indicators. The results of our experimental programme suggest wood processing as the main activity performed with boar task tools.

The Low Povolzhye includes the northwest Caspian Sea region, the Povolzhsky steppes and the semi-desert Caspian Sea region. Following a period of aridification, a humid period began in this region around 6700 cal BC. Desert conditions were replaced by a more favorable steppe landscape. This allowed a hunting economy to function properly. All sites were located on lake shores, which were a magnet for animals. Onager and saiga antelope were hunted at watering sites in the north Caspian Sea region, onager, saiga antelope, aurochs and tarpan in the steppes Povolzhsky, and gazelle in the northwest Caspian Sea region. Red deer, wild boar, wolf, fox and hare were hunted to a lesser extent. Bird bones are rare in the archaeological assemblages. Geometric microliths of trapeze and segment shapes were used as arrowheads. Fish bones, including catfish, pike-perch, pike and sturgeons, were found at individual sites near the river. There are solitary records of turtles. The only domestic animal was dog. Hunting and fishing took place all year round. Hunting increased further around 5500 cal BC and aurochs and tarpan started to appear in the north Caspian Sea region. But their hunting percentage is low. The number of sites decreased at that time, and the proportion of wild animal bones also decreased. A hunting crisis began to emerge. Hunting of onager and saiga antelope in the Low Povolzhye was decreasing around 5000 cal BC, and hunting tarpan and aurochs strongly decreased. This was due to changes in livestock husbandry. There was a shift from hunting to cattle breeding. Bones of domestic sheep and goats from this period were found on the sites of the Caspian Sea region culture (in the north Caspian Sea region and in the Povolzhsky steppes). According to the Khvalynsk culture materials (4700-4500 cal BC), hunting of aurochs and tarpan decreased in this region. The role of onager and saiga antelope became extremely small. In their place, bones of sheep and domestic cattle are found. The changed animal exploitation strategy was not related to developments within the local population. New cultures with their distinctive pottery, new raw materials and special techniques for producing stone tools came to the Low Povolzhye. These tribes hunted, but on a smaller scale. This was not an evolutionary process, but a transformation.

The Mesolithic is best known from the Caspian Sea region, where the Caspian Sea culture, which flourished around 5500 cal BC, had a significant impact on both the northern and southern Mesolithic. The Caspian Sea culture was characterized by a high degree of specialization in hunting and fishing, with a particular emphasis on the exploitation of marine resources. The most distinctive feature of this culture was the use of large-scale fish traps, which were constructed using a combination of wood, reeds and nets. These traps were used to catch a variety of fish species, including large predatory fish and river herring. The Caspian Sea culture also had a strong influence on the development of the Mesolithic in the surrounding regions, including the Povolzhsky steppes and the south Caspian Sea region. This influence was evident in the adoption of new technologies, such as the use of larger and more sophisticated stone tools, as well as the development of new hunting and fishing strategies. Overall, the Caspian Sea culture played a significant role in shaping the Mesolithic in the region, and its legacy can still be seen in the archaeological record today.
Interpreting the Archaeological Record

experts were presented with this information, and they were asked to discuss the implications of their findings. The discussion was lively and informative, with many experts sharing their insights and experiences. The experts agreed that the data was promising and that further research was needed to fully understand the implications of the findings. Overall, the day was a success, with many new insights gained and new collaborations forged. The experts are already planning to meet again in six months to discuss the latest developments in the field.

TH1-10 Abstract 07

Exploitation of animal raw materials in the Early Neolithic in the Balkans

Author: Selena, Vlasevich, Institute of Archaeology, Belgrade, Serbia (Presenting author)

Keywords: bone technology, Early Neolithic, osseous raw materials

Presentation Preference - Oral

Raw material selection of animal hard tissue is directed by technological, but also cultural factors. The availability of specific skeletal elements, their physical and mechanical properties, as well as cultural attitudes toward a certain animal and its body parts are the main factors in the process of selection. In the Early Neolithic of the Balkan region, osseous raw materials had an important role for crafting everyday tools, but also personal ornaments. In this paper, we present some aspects of the exploitation of osseous materials, in particular raw material acquisition and management. Bones from both domestic and wild animals were used, but also antlers, teeth and occasionally, mufos shells. Preferences in the selection of a specific skeletal element or a specific tool type may be observed - for example, the preference for cattle metapodial bones in spoon and projectile point manufacturing, the predominance of skeletal elements from wild species for ornaments, etc. Furthermore, a certain diversity among different Early Neolithic communities may be observed, especially in the ratio of antlers; in some cases, certain species are represented, whereas in others they are almost completely absent. To some extent, this is related to the immediate environment, but also is connected with differences in economic activities and local cultural preferences.

TH1-10 Abstract 08

Changes in pig populations feeding in the context of animal domestication in the northeast Iberian Peninsula

Author: Naveveta, Vanessa, Universitat Autonoma de Barcelona, Bellaterra, Spain (Presenting author)

Keywords: bone technology, Early Neolithic, pig management

Presentation Preference - Oral

The contribution of animal domestication to the socio-economic changes in the Iberian Peninsula during the spread of the Neolithic in the first half of the Holocene is indisputable. Animal domestication was a transcendent turning point in the management of animal resources. Among the domesticated species, pigs were an important food source. However, it is difficult to discriminate between domestic and wild pigs from the faunal assemblages of this period. Several methodological approaches have been applied to address this issue, the most common being based on morphological and biometric criteria. Stable isotope analysis of bone remains can also provide valuable insights into human-animal interactions, while offering new perspectives on animal domestication. Here we present the results of an integrated study involving carbon and nitrogen stable isotopes, slaughter pattern, morphometric and biometric analysis of wild and domestic pig assemblages from the northeast Iberian Peninsula, dated between 5700-4800 cal BC. This multidisciplinary approach aims to: (i) evaluate changes in pig management and exploitation strategies, and (ii) assess the social and environmental implications of the Early Neolithic in the northeast Iberian Peninsula. Our results indicate that the diet of Sus scrofa was substantially modified by Neolithic communities in the northeast Iberian Peninsula. We interpret this change as a result of the new selective pressures to which the wild species were submitted by humans during their domestication. The impact of this change on management strategies is also assessed, taking into account the different work processes and social relationships involved in the management of this resource.

TH1-10 Abstract 09

Aurochs’ distribution and evidence of hunting in the pre-Neolithic and Neolithic Central Balkans

Author: Dimitrijevic, Vlada, University of Belgrade, Belgrade, Serbia (Presenting author)

Keywords: Aurochs, Central Balkans, pre-Neolithic and Neolithic

Presentation Preference - Oral

The economy was based on hunting elk, beaver, aquatic and wading birds, as well as intensive activity. The site of Zamosojić 2 was located in the centre of a wide lake plain in a former glacial basin. Cyclical fluctuations of the palaeolake level and a gradual change of the landscape did not influence subsistence strategies of ancient inhabitants greatly, in spite of the appearance of potting making technology. Bone hunting always occupied an important place in the subsistence activity of the Zamosojić 2 inhabitants. The bone industry includes hundreds of implements made from beaver jaws and incisors, used as woodworking tools, as well as ornaments and pendants. In spite of pronounced changes in cultural traditions over more than 2000 years, the main principles of production, shaping and final use of the tools made from beaver jaws remained the same. This, as well as some other specific types of bone tools, typical of the upper Volga region, raise the question of how an ecological niche influenced some aspects of human activities and the rational use of natural resources.

TH1-10 Abstract 10

The Copper Age fishery at Pietrele, Romania (5th millennium BC) and the return to wild resources

Author: Ritchie, Kenneth, ZIBA, Askot, Denmark (Presenting author)

Keywords: Copper Age, fishing, Romania

Presentation Preference - Oral

The Chalcolithic period (5th millennium cal BC) in the area of the Lower Danube River is of particular interest for archaeologists because of evidence of early metalurgy, incipient social stratification, and at many sites a renaissance in the exploitation of wild animals in the subsistence economy (although domesticated animals continue to be important). Since 2002, excavations at the site of Pietrele, Romania (on the floodplain of the Danube River) have produced abundant evidence of exploitation of fish and other aquatic animals both in the form of faunal remains and some of the technologies used to procure them. Although examples of very large catfish and cyprinids are common in the assemblage, wet sieving of soil samples has also revealed the presence of numerous bones from very small fishes - indicating a very intensive exploitation of aquatic resources by the site’s occupants. Understanding the fishery is essential to understanding how the settlement was provisioned and to questioning why wild resources once again became so important at some locations during the Copper Age.
TH1-11 Abstract 01

Emergent and Downfall of Viking Towns: The Concealed Phases within the Archaeological Record

By Dr. Kalmring, Sven, Centre for Batic and Scandinavian Archaeology, Schleswig, Germany (Presenting author)

Keywords: Concealed Phases, Urbanisation, Viking Towns

Presentation Preference: Oral

In Viking studies one of the most attended field of research is – apart from the process of Christianisation and Scandinavia's early urbanism as a complex and utterly dynamic process.

Papers in the session will address methodological problems, but more importantly, they will seek to widen our understanding of the early phases of Walichrum (Domburg-Oostkapelle, NL) of the relationship with the nearby ringfort of Domburg. Previously the fort was thought of as a successor to Walichrum, the refuge of the latter's inhabitants in the politically unstable post-Carolingian period.

This paper will trace the life trajectory of Walichrum, with special attention to these hitherto overlooked early and late phases. The developments on the site will be framed in wider discussions of landing places and urban settlements in northwestern Europe. This will be done in reference to the dynamic coastal landscape in which this site was located, which during the period under consideration developed from a remote barrier island in the Scheldt estuary, backed by an inhospitable tidal marsh, to the dune belt of a large island rich in sheep-grazing grounds. It will be argued that the site's occupation history, in particular its final phase and ultimate disappearance, was determined to a large part by regional socio-political developments, in turn linked to much broader cultural and political changes in the North Sea area.

TH1-11 Abstract 02

Before and after the emporium. The early and late phases of Walichrum (Domburg-Oostkapelle, NL)

By Dr. Deckers, Pieterjan, Vrije Universiteit Brussel, Etterbeek, Belgium (Presenting author)

Keywords: early medieval, urbanisation

Presentation Preference: Oral

Walichrum, situated near the present-day town of Domburg (Netherlands), is often referred to as one of the late Merovingian and Carolingian emporia, an interpretation mainly based on the substantial number of coins collected on the eroding beach by 19th-century antiquarians. However, a review of the full range of evidence makes clear that this emporium did not emerge out of nothing, situated near a Roman temple, the site probably continued to function as a cult site throughout the Early Middle Ages and derived some of its early significance as a trading site from this. Similarly, the significance of the site following the heyday of Carolingian rule, from the second half of the 9th century onwards, has been neglected. Previously, it was thought that the site was abandoned in the later 9th century, a few decades after a recorded Viking raid in AD 837. However, the re-evaluation of the evidence brought to light late 9th- to 11th-century material attesting to continued activity. This, in turn, necessitates a renewed assessment of the relationship with the nearby ringfort of Domburg. Previously the fort was thought of as a successor to Walichrum, the refuge of the latter's inhabitants in the politically unstable post-Carolingian period.

Thanks to new research the fort area now emerges as an integral part of Walichrum from the 7th or 8th century onwards, long before the construction of the fort in the third quarter of the 9th century. This paper will trace the life trajectory of Walichrum, with special attention to these hitherto overlooked early and late phases. The developments on the site will be framed in wider discussions of landing places and urban settlements in northwestern Europe. This will be done in reference to the dynamic coastal landscape in which this site was located, which during the period under consideration developed from a remote barrier island in the Scheldt estuary, backed by an inhospitable tidal marsh, to the dune belt of a large island rich in sheep-grazing grounds. It will be argued that the site's occupation history, in particular its final phase and ultimate disappearance, was determined to a large part by regional socio-political developments, in turn linked to much broader cultural and political changes in the North Sea area.

TH1-11 Abstract 03

Bypassing monolithic entities: diachronic and spatially informed approaches to early medieval towns

By Wouters, Barbora, Vrije Universiteit Brussel & University of Aberdeen, Brussels, Belgium (Presenting author)

Keywords: early medieval, geoarchaeology, urbanisation

Presentation Preference: Oral

The settlement areas of early medieval towns have in the past been subject to generalisations interpretations of their character, layout and function. Changes in the towns' dynamics over generations of town dwellers have not often been addressed, while these changes are the key to a multi-faceted understanding of the daily lives of the inhabitants, and how these may have changed over time. The complex nature of urban deposits has in some cases prompted excavation using a random division in spits, while an opposite reflex is necessary to produce a clearer phasing of each separate case. Before comparisons are made, the individual life trajectory of each town should be understood in its fullest.

This paper examines how geoarchaeological approaches (micromorphology, microRF, and other techniques) contribute to a more nuanced understanding of these towns, with a focus on the earliest and latest phases of the towns under study. Illustrating this approach with case studies from the Low Countries, including Tongeren and Antwerp, and Scandinavia, such as Holsted and Kaupang, this paper makes a case for a particularistic examination of early medieval towns before wider comparisons are made.

With current geoarchaeological methods, it is possible to record and interpret separate phases of each town in more detail, to collect finds accordingly and source dating materials more securely. It is also possible to add information about well-dated but unclear phases of the towns, such as in the case of homogeneous deposits, so-called dark earths. The latter often occur precisely at the beginning and perceived end of early medieval towns, making their interpretation a challenging endeavour. Not every layer of deposit or nuance is captured by geoarchaeological means, but more details can be added to the state of art on each individual town, perhaps even narrowing down the scope to particular changes at the scale of generations. Not just a diachronic approach, but one that takes into account diversity on a horizontal level as well, is necessary to further grasp the complexity of these urban entities. A combination of a diachronic approach and spatially informed one on a macro-scale yields archaeological results with the strongest interpretative value, and, if integrated into the research project design from the very beginning, provides a way to contextualise the enormous amounts of material these sites produce.
THI-11 Abstract 04
Changing Places: a comparative discussion of London and Tours in the Early Medieval Period
Author - Donnelly, Harriet, The University of Sydney, St Leonards, Australia (Presenting author)
Keywords: early medieval, settlement patterns, urbanism
Presentation Preference - Oral

The settlements of Western Europe experienced a period of significant transition following the decline of Roman control in the 5th century AD. The movement of people and ideas resulted in change and reorganisation for many communities in what had previously been Roman settlements. Such developments occurred both within the boundaries of the old structure, and by expanding or moving beyond those existing limits. Many of those sites which saw significant change developed slowly over a longer period of time, often not taking the recognisable Medieval shape until at least the 12th century. This paper examines the developmental stages that occurred at two settlements which saw significant changes from the 5th to 12th centuries AD: London and Tours. Both developed according to a pattern of twin towns with the two halves divided by a small area with limited occupation. London and Tours were both hugely important settlements and a comparative discussion of respective changes at each site during this period highlights the various methods by which such settlements developed as well as providing insight into both a trade driven and mosaic model of the twin town phenomenon. Examination of these sites and how they changed during the Early Medieval period, will enable a deeper understanding of the complexity of urban development and transitional processes.

THI-11 Abstract 05
A Subversive Urbanism: Venice in the 9th century
Author - Calon, Diego, Stanford University, Stanford, United States of America (Presenting author)
Keywords: Adriatic, Emporium, Venice
Presentation Preference - Oral

How did Venice's urban structure look like in the 9th century? Venice suffers from its own legends. The materiality of the rising Venice has been generally perceived as sites without time and space, where a fully established myth describes the origin of the city. The Venetian lagoon, in fact, was the place where the noble Romans sought refuge from the barbarian hordes: they had been forced to move to uninviting areas along the margin to be free and safe. In the islands the newcomers were able to rebuild a place that, according to the historic narratives, was ideologically and materially comparable to the old Roman sites. The uncovered wooded structures of the early medieval houses, for example, have been described as a poor reaction to a situation of great material and social-economic stress. An independent archaeological assessment, on the contrary, has shown how these buildings were comfortable and perfectly designed for the lagoon environment. Clay foundations and wood structures were technically appropriate for a cold and humid setting. The choice of the lagoon itself was not forced. The settlement patterns were not exterminationarya, but followed precise social and economic designs. The settlement followed the movements of the lagoon and the river mouths: the first Venetians tried to occupy the more distant islets in order to control both the maritime and the riverine sailing routes. Artisanal productions (glass goblets, parchments, metal crafts) were not subsistence economies; the emporium layout of the sites allowed the circulation of raw materials, techniques and skilled people. Venice was a proto-capitalistic site. A large part of the production (shipyard, timber industry, glass and metal productions, etc) was made by labour forces with a status very similar to slaves. Probably, also, slaves were one of the most valuable goods, which the Venetians traded with the Islamic world. But slaves, dirty workshops or labour class issues are not good ingredients for the myth of the origins or for the official history of a superpower state. Venice proudly defined itself from the very beginning as a democracy and a free republic: Venetians needed a respectable and glorious past, and they made it up, reshaping also the "ideal of the early city." The idea of the early Venice, moreover, cannot be separated from the present. Traditional archaeology, instead, has studied it as phase of the previous roman past. The archaeological study of its urbanism should be considered in the counter light of the fluid social negations that took place around a very specific environment, creating polylocal sites, which will be cities in the following centuries.

THI-11 Abstract 06
How and when Venice became Venice. Framing the urban development of a trading town in Italy
Author - Dr. Piazzenta, Annamaria, Ca'Foscari University, Venice, Italy (Presenting author)
Keywords: Early Medieval Venice, Trading Town, Urban Identity
Presentation Preference - Oral

Venice was one of the most important cities in Europe in the late Middle Ages and the Modern era, when it formed an independent state which controlled trade across the Mediterranean and towards the Levant. A myth of Venetian uniqueness has been cultivated by local historians and international specialists which has always attributed to the town on the lagoon an innate and unique vocation for political autonomy and trade. This in fact is only partially based on historical facts. Although some exceptional elements are observable - such as the local government of the Venetian public assembly (palestra) and the amphibian nature of the settlement (la giustiniana) and the ambivalence often overestimated at least as far as the Early Middle Ages is concerned. In the 9th and 10th centuries the apparently novel appearance of Venice on the Italian political scene and the associated emergence of the Venetian public assembly presided by the doge has numerous parallels in other parts of Italy where several urban communities, mostly represented by their basilicas, claimed to act as social and political entities at the same time. In addition, the region around Venice demonstrated its own economic vitality with other towns competing for the control of the Adriatic sea well before the 9th century by engaging in maritime and artisanal activities resembling strongly the activities of those other settlements in Northern Europe, which archaeologists such as Chris Loveluck and Will Bowden usually call emporia.

Moreover, some recent reconstructions suggest that the rapid growth of Venice in the 8th and 9th centuries can be explained by a conjunction of the contemporary expansion of the Carolingian empire which increased demand for luxury goods with Venice's special location on the sea near a great river delta (the Po). Although it is likely that the convergence of both these factors had played a major role in the sudden development of the city, it is often forgotten that Venice shared the same ecological and the same economic system with many other trading towns at least in this earlier period. These facts pose other challenges to the traditional triumphalist explanations. Why did Venice enjoy a more durable success in a long-term perspective with respect to other towns? What exactly made the difference in the Venetian case? Was it mere coincidence that Venice was the seat of a political authority, the doge, whereas the other emporia were not? Was the fact that this authority was secular (a duke) rather than religious (a bishop) as elsewhere the key point?

The paper will seek to answer these questions by analysing the case of Venice in a comparative context and in the light of both archaeological data and written sources, by suggesting for the city, before 1050, typically rather than exceptionally in terms of population size, accumulation of wealth and socio-economic development.

THI-11 Abstract 07
The origins of urbanization in the forest-steppe zone of Western Siberia
Author - Tsymbalyuk, Svetlana, Institute of problems of development of the North, Tyumen, Russian Federation (Presenting author)
Co-author(s) - Anoshko, Osipanta, Institute of problems of development of the North, Tyumen, Russian Federation
Keywords: fortresses, urbanization, Western Siberia
Presentation Preference - Oral

A huge archaeological material testifies that the origins of urbanization in Western Siberia should be associated with the formation of ancient fortified settlements - fortresses that appeared on this territory in the Bronze Age and protocivilizations formed in the early Iron Age. The first simple fortifications in the form of stockades or fortified dwellings in the forest-steppe zone of Trans-Urals are fixed on the materials of the Bronze Age monuments (the II millennium BC). During this period their number was insignificant, the bulk continued to be unfortified villages. The increase in the number of fortified settlements was greater in the transition period from bronze to iron (the 2nd quarter of the 1st millennium BC). They were round-oval in shape towns with area up to 4 hectares. There were major suburbs around them. The castles of the time were poorly fortified fences. The appearance of the first fortifications is connected with the destabilization of the political situation in the region as a result of the influx of migrants from the North of Western Siberia. Then the strengthening of the village with a palisade or a fence was not defensive but probably ideological in nature. The aim was to preserve in the early Iron Age the middle of the 1st millennium BC – the middle of the 1st millennium AD the number of settlements increases. In the forest-steppe zone of Trans-Urals they number more than 100. One-third of excavated settlements are multicultural, from 15 to 20 fortified settlements belonged to carriers of different cultures. Within this period the dynamics of formation is well traced. Fortification of early stage continue the tradition of the transition from bronze to iron time. Archaeologically they are fixed in the form of small grooves on the perimeter, holes for piles, charcoal and traces of burnt wooden structures in the embankment of the earthen rampart. They are reconstructed as a hedge of stockade fence around the residential area. Most of them could not perform a defensive function. Already at that time there is specialization of fortified settlements as centers of metalworking, import, exchange, cooperation of multicultural population. By the 5-3 centuries BC increasing complexity of fortifications is recorded. The number, height and power of the earthen ramparts with wooden fortifications in the form of the palisades, fences, walls, crakes, towers and surrounding ditches are increased. There is not only a general tendency to strengthen the fortifications, but also to the complexity of their structure: double-, triple area settlements are emerging. The search for new forms, combinations of known elements and structures to enhance the overall defensive capability is noted. The materials of some fortresses in the form of Chinese and Central Asian origin indicating them as centers of trade and exchange. The fortresses became the centers of origin and transmission of cultural innovation, and the process of urbanization and the resulting changes in the ancient and medieval societies to the greatest extent determined the development of the region.
The early urban development in the steppes

Author - Dr. Habl. Ochir-Goryeva, Institute of archaeology Tatarstan academy of sciences, Kazan, Russian Federation (Presenting author) Co-author(s) - Dr. Habl. Ildikov, A. Institute of archaeology Tatarstan academy of sciences, Kazan, Russian Federation Keywords: Chasarian Kaganat, steppes, urban development Presentation Preference - Oral

The earliest urban sites in the East European steppe date to the Early Medieval Epoch and, in particular, to the time of the Chasarian Kaganat (from the 7th to the 9th cc). So far their number has been limited to several, now famous, urban developments located along the Don river such as Sarmat-Belaya Vezha, Pravo-Berezovoye Taimylenskoye gorodishche (urban development), and Semikarakorskoye gorodishche. Numerous urban developments in the adjacent areas of the foreststeppe Podmore (the Don basin valley) and Proimovoye (the Donovoye Don valley) dating to the Chasarian epoch are representative of the material culture of the Don Alan, Bulgar, Oguz, Pecheneg, and Slavs. Those of the Crimea and the Northern Caucasus associate with the culture of local sedentary populations who were agrarians. Only those sites that are located between the Don and the Volga belonged to the Chasarian Kagan proper, hence it is these urban developments that can be related to ethnic Chasarians. The last decades saw simultaneous discoveries of several sites of the Chasarian Kaganat in the Volga-Don steppe. In the late 1990s at a kilometer distance from the Pravo-Berezovoye Taimylenskoye gorodishche an urban development was opened, which contained the ruins of fortress walls of white lime stone. One of the stone blocks displayed a tamga of a typically Chasarian shape. The new fortress got the designation of Sarkel-3 as a part of the whole agglomeration complex that includes also Sarkel and Pravo-Berezovoye Taimylenskoye gorodishche urban developments. At the same time a Chasarian epoch tower layer was opened under the layers of the Golden Horde urban center on the site at the village of Samosdelka in the Volga estuary. According to the archaeologists that led the excavations, the geographical position and the character of the constructions of the Samosdelka lower layer suggest that these may be the remnants of the town of Tifl. In 2008 followed the opening of the Baishanta gorodishche that contained the ruins of constructions made of white clay shell stone and tile fragments parallel to those found in late Chersonesus on the Crimean peninsula (Jacobson, 1958, 1964). One of the stone blocks also had a tamga cut out in it. According to two radiocarbon dates (622-655 at 68.3% and 600-662 at 95.4%) and (672 - 782 at 90.8%), resulting from the analysis carried out by Leibnitz Laboratory of the Kiel University (Germany), Baishanta turns out to be the earliest of the urban developments in the East European steppe dating to the time of the Chasarian Kaganat. The excavations of 2000-2005 of a number of late medieval urban centers and developments in the Lower Volga, undertaken by the Khalilov Institute of Archeology of the Tatarstan Academy of Sciences, resulted in discovering cultural layers of the Early Medieval Epoch. As a number of the discovered sites show, the urban development in the time of the Chasarian Kaganat. Thus, further effort along the lines will contribute to an understanding of early medieval urbanism in the archeology of Europe.

Viking age settlement networks and the rise of the early urban centers on the Upper Volga

Author - academician Malakov, Nikolay, Institute of Archaeology of the Russian Academy of Sciences, Moscow, Russian Federation (Presenting author) Keywords: large unfortified settlements - early urbanization, Upper Volga Presentation Preference - Oral

Early urbanization of Northern Rus’, including Upper Volga region, is usually presented as the formation of the trading centers which emerged in IX-cc. on the river routes from the Baltic to the East in connection with the Oulu silver circulation and later developed in the centers of control over the trade networks. This vision of the early urban centers of Rus’ was strongly inspired by the studies of emporia in North-Western Europe. One of the central issues of this concept is the idea of drastic contrasts between the rural sites and the early towns, both in their economical background and cultural shape. Field investigations in the Suzdal Opole region in the Upper Volga, which constituted the core area of Northern Rus’, conducted in the two recent decades, produced extensive new data on the Viking age and Medieval settlement, cultural landscapes, rural sites and early towns with the perspective of better understanding of settlement hierarchy and social contexts. Most important elements of this network were the large unfortified settlements - extensive unfortified sites or sites clusters, with the area from 4 to 15 hectares. Large unfortified settlements produce evidence of trade, craft production and agrarian activities, as well as of prosperity and high social status of a number of the settlers. Suzdal town, known from the written sources as the main urban center in the region, became noticeable only in the 13th century. There is no evidence of its social and political importance in the X-XI cc. The rise of Suzdal town did not lead to the collapse or decay of the large settlements. Most of them produce evidence of development and prosperity in the X-XII cc. These questions are essential in the context of Odense, but will be used also to archaeia central points in a principal discussion on methodologically challenges, definitions and dynamics regarding early urbanism.
Unlocking the Archaeological Record

TH1-11 Abstract 12
More than a landing site, less than a vicus. Medieval Gaïsir in northern Iceland

Author - Prof. Vésteinsson, Orri, University of Iceland, Reykjavik, Iceland (Presenting author)
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Keywords: Iceland, Medieval, Trade
Presentation Preference - Oral

Gaïsir is well-known from historical records as the main trading site in Northern Iceland in the medieval period. The site has an extensive runway and a church, and when large-scale excavations began in 2001, it was expected that direct evidence would be found of exchanges between foreign merchants and native Icelanders. 6 years of meticulous excavation failed to identify much evidence for trade taking place at the site, which nevertheless has several of the attributes normally associated with emporia. This has raised questions about the nature of the site and the nature of trade in a marginal economy like Iceland. This paper discusses the evidence unearthed at Gaïsir and places it in the context of social and economic organization in the medieval North Atlantic.

TH1-11 Abstract 13
From late prehistoric harbours to medieval towns in the eastern coast of the Baltic

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Keywords: development of towns in the Eastern Baltic, late Iron Age centres, trade and communication
Presentation Preference - Oral

Although several international trade routes run through the Eastern Baltic, Viking Age hill-forts and settlements are predominantly found along Estonian northern and insular coasts, while the number of them along Latvian and Lithuanian coasts is quite modest. The situation changed in the 11th-12th centuries, as several coastal settlements were taken into intensive use. Not all of them developed into medieval towns, and some medieval towns were established in places without any prior settlement. My speech focuses on the predecessors of two present-day Eastern Baltic capitals, Tallinn and Riga. Both of them were founded as agrarian towns in the first quarter of the 13th century, however, it is at first glimpse the two cities’ differences that stand out. Quite a number of 12th-century archaeological remains have been uncovered in Riga, while in Tallinn no pre-13th-century archaeological layer has been demonstrated below streets and walls of the Old Town so far, despite of numerous archaeological excavations. However, settlement remains were recorded a couple of hundred meters away from the Old Town of Tallinn. A closer look also reveals other similarities in the natal phase of Tallinn and Riga, e. g. adjacent hill-forts and the vicinity of probable cult-places. Their similarities also include topographic location of the locations accompanying sites, and their place in an overall culture historical context. It depends on one’s research methods, favourite theoretical schools and later history how to interpret the sites under present-day Tallinn and Riga. Looking around in the Baltic Rim, parallels can be found for the development of these sites, while comparisons to similar settlements with somewhat different later history may be drawn on Eastern Baltic coasts. Ideas of the origin and development of prehistoric Riga and Tallinn will accordingly be presented in my speech, placing them in a broader international context.

TH1-11 Abstract 14
Hot beds? Manure pits in medieval Ackerbürgerstädte

Author - Dr. Van Oosten, Roos, Leiden University, AMERSFOORT, Netherlands (Presenting author)
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Keywords: agrarian towns, hot beds, late medieval
Presentation Preference - Oral

Dutch urban archaeology has uncovered hundreds of pits dating from the thirteenth to fifteenth century containing animal manure mixed with bedding straw. On occasion an array of manure of pits has been uncovered. The traditional explanation is that they were used to store manure for agricultural use. This explanation is questionable given that manure requires aerobic conditions and frequent turning for it to be transformed into useful fertilizer. A dung heap rather than a manure pit would be expected. Historical texts dating from the seventeenth and eighteenth centuries describe a method of hot beds that might help explain the manure pits. Horse manure was spread on the bottom, and once fermentation had begun, a layer of soil was spread on the steaming manure, ready to be planted with cucumber, radish, and melon. The heat produced by the manure guaranteed that vegetables could be planted months earlier than if a hotbed had not been used, and then also harvested earlier. The main question in this presentation is whether archaeological manure pits can be designated as hot beds. If so, this would reveal a form of urban market gardens. The preliminary results of the multi-disciplinary manure pits research group will be presented.

TH1-11 Abstract 15
The rural component in the early urban development of Brussels, Belgium

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Keywords: Brussels, Geoastructureology, Urban agriculture
Presentation Preference - Oral

The study of the early development of Brussels, Belgium, has shown to be a challenge. Over the last century historians have heavily debated on the scarce existing – often very questionable – historical sources, trying to explain the emergence of this city situated along a steep slope bordering the Senne river. In the last decades, a new generation of historians underlined the importance of agricultural development and expansion as an important factor for the early development of Brussels (Charnauds, 2011). Of course the question should be raised whether there are any archaeological data supporting this hypothesis. Despite the many interventions taking place in the centre of Brussels, no remains of farms have been recovered. But archaeologists do almost systematically encounter dark earth dating from the 10th-13th century AD period, where the historians situate the early town development.

An interdisciplinary approach has been developed to study these dark earths, involving not only historical research and archaeology, but also geoarchaeological (including soil micromorphology and physico-chemical analyses) and archaeobotanical studies. These studies highlight that several human activities can be hidden behind complex formation processes, some related to the development of an agro-pastoral system (Devos et al., 2009; 2011, 2013; Vrydaghs et al., 2016).

The present contribution will discuss the results of the study of these dark earth units, and demonstrate how they contributed to the understanding of the early town development and the importance of agricultural activities, the location of crop and pasture land, and the cultivated crops.

References:
Integrating archaeo-ecoarchaeology and phytohistory analysis. Quaternary International 315, 147-166.
This paper will discuss how to understand the early development of Odense seen through the archaeological record. Is it possible to see if, how and when the town transformed from agrarian to urban during the 11th to 16th Century? Until now the evidence in the craft and history of Odense has mainly been based on the sparse remains of a Viking Age ring fortress and written sources testifying to Odense as a place of significance from around 1000 CE. Recent large-scale excavations have offered the opportunity to study this early phase of the town from an archaeological point of view emphasizing the physical remains and change in use of space.

Up to several meters of well-preserved stratigraphy were excavated applying a strictly managed contextual method, reflective interpretation of the formation of the cultural deposits and sampling for macro botanical, zooarchaeological and micro-morphological analyses. With an extensive finds assemblage and well-preserved structures such as booths, houses, byres and stables, latrines, paths, roads, fences, manure heaps and much more the site data forms the basis for addressing the question if certain features can be distinguished as agrarian or urban and how these features change over time.

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**TH1-11 Abstract 17**

Craftspeople in emporia - the original cast.

**Non-ferrous metalworkers in eighth century Ribe**

**Author** - Prof. S. M. Nielsen, Aarhus University, Højbjerg, Denmark (Presenting author)

**Co-author(s)** - Neiss, Michael, Uppsala University, Uppsala, Sweden

**Keywords**: 3D laser scanning, Crafts, Urbanism

The current paper aims to highlight the differing strata of localities on which the establishment of the network of Viking Age towns rested. This is to be understood as the possible developmental dependency the bigger and perhaps more centrally positioned early towns might have had on the smaller and more resident types of localities. Special attention will be paid to the different kind of production sites which has been registered in South Scandinavia. Quite often these sites are characterized by a special type of archaeological structures and by being topographically interwoven with the more elaborate agendas of the (local) aristocracy. The current paper discusses the socioeconomic development of the region and seeks to illustrate the dynamics and the broad regional productivity during the centuries prior to and parallel to the first urban development. Fresh results from spatial and chronological analyses of a large corpus of metal-detector finds challenge previous notions of settlement continuity and emphasize the presence of distinct regional patterns of socioeconomic change.

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**TH1-11 Abstract 18**

Multimetal smithing - An urban craft in rural settings?

**Author** - Svensson, Andreas, Lund University, Lund, Sweden (Presenting author)

**Keywords**: Complex metalworking, Multimetaltry, Urban package

Multimetal smithing should be defined as the use of more than one metal and/or different metalworking techniques within the same crafts-milieu. This complex metalworking has long been linked to centrality, central places and urbanity in Scandinavia. It has been extensively argued that fine casting and smithing, as well as manufacturing precious metals was exclusively undertaken within urban settings or the “central places” pre-dating these. Furthermore, the presence of complex metal craftsmanship has been used as a driving indicator of the political, social and economic superiority of certain sites, thereby earning their identity as “centralized.” Recent research has come to challenge the unification of this link between urbanity, centrality and complex metalworking as sites in rural settings with evidence of multimetal smithing are being identified. This shows that the relationship between the craft and centrality (urbanity) must be nuanced and that perhaps multimetal craftsmanship should be reconsidered as an urban indicator.

The thesis project “From Crucible and onto Avili” started in 2015 and focuses on sites housing remains of multimetal craftsmanship dating primarily from 500-1000 AD. Within the project a comprehensive survey of sites will be used to evaluate the presence of multimetal craftsmanship in the landscape. Sites in selected target areas will also be subject to intra-site analysis focusing on workshop organisation, production output, metalworking techniques and chronological variances. A thematic aim in the project is to elucidate the conceptual aspects of complex metalworking. The term multimetalty is used to analytically frame all the sociological and economic aspects of multimetal craftsmanship. Through this inclusive perspective both the craftsmanship and the metalworkers behind it are positioned within the overall socioeconomic framework. The metalworkers, their skills and competences as well as the products of their labour are viewed as dynamic actors in the landscape and on the areas of political economy of the Late Iron Age.

The survey has already revealed interesting aspects concerning multimetal smithing and urbanity. Although the multimetal sites do cluster against areas of early urban development there are also other patterns emerging. Multimetal craftsmanship - both as practice and concept - was well represented in both rural peripheral settings and urban crafts-milieus. This means that the role of multimetalty as part of an “urban conceptual package” is crucial to investigate. Such an approach will have the double ends of properly understanding the craft and its societial implications, but also further the knowledge of the phenomenon of urbanity as a whole. Was multimetal smithing part of an “urban package” that spread into the rural landscape? Did the multimetalty differ between urban and rural crafts-milieus? How does early urbanity relate to the chronology of multimetal craftsmanship?

This paper aims to counter these questions using examples from the survey of multimetal sites conceived to counter the thesis project. A comparison between selected sites will be presented. The purpose of this is to evaluate the role of multimetalty within the “urban package” and discuss the role of complex metalworking in the establishment of urban areas of interaction in Late Iron Age Scandinavia.

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**TH1-11 Abstract 19**

The Trajectory of the Productive Limfjord Region AD 600-1100 – Exploring Changing Economic Patterns

**Author** - Christiansen, Torben Trier, Aarhus University, Arden, Denmark (Presenting author)

**Keywords**: Metal-detector finds, Regional spatial analysis, Socioeconomic change

The paper will discuss how to understand the early development of Odense seen through the archaeological record. Until now the evidence in the craft and history of Odense has mainly been based on the sparse remains of a Viking Age ring fortress and written sources testifying to Odense as a place of significance from around 1000 CE. Recent large-scale excavations have offered the opportunity to study this early phase of the town from an archaeological point of view emphasizing the physical remains and change in use of space.

Up to several meters of well-preserved stratigraphy were excavated applying a strictly managed contextual method, reflective interpretation of the formation of the cultural deposits and sampling for macro botanical, zooarchaeological and micromorphological analyses. With an extensive finds assemblage and well-preserved structures such as booths, houses, byres and stables, latrines, paths, roads, fences, manure heaps and much more the site data forms the basis for addressing the question if certain features can be distinguished as agrarian or urban and how these features change over time.

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TH1-11 Abstract 21

Production and Distribution networks in the Diocese of Tuam, West of Ireland, AD 500-1000

Author - Tighé, John, Trinity College Dublin, The University of Dublin, Castletown, Co. Mayo, Ireland (Presenting author)

Keywords: Church/Sacral, Economic development, Trade

Presentation Preference - Oral

The discussion of early medieval urban development in Ireland is dominated by the coastal emporia of the Vikings at Dublin, Waterford etc. As vigorous the Vikings were in facilitating broad social and economic change, they were still an ethnic minority in Ireland, so it is imperative to look at sites with little or no Viking connection. There are pre-Viking 'ports of trade' which while similar to English wics, although seem to develop slightly earlier and not to have an organised plan. These include sites such as Donoughough, a coastal site where exchange happened in the eighth century. The problem of the production of wares thought to have been by buying in the grain, as there is a lack of evidence for on-site production with the grain samples excavated being entirely free of chaff. The site, and possibility others like it were not permanently used, but seems to have been occupied between late spring and early autumn, the very same as the main sailing season for much of Europe. This form of exchange may have been brought into fruition as increased specialisation of production coupled with increased opportunities to exchange. This may have had a direct impact on the decline of the importance of the cow can be seen as a move away from the type of economy, widespread in pre-Roman Europe, where an item's value was bestowed upon it not because of its intrinsic value, like that of the silver economy which the Vikings helped to develop, but in its cultural value. The silver bracelets found at places like Cushalogurt, Co. Mayo and Portumna, Co. Galway could indicate a much richer trade network through peripheral Ireland, or at least a heavier Viking presence in the area than previously thought.

While the terminology of ecclesiastical sites, particularly the use of 'cities' to describe sites such as Killare, has smudged the idea of what constituted urban in this context, it is clear that these establishments acted as centres of production and distribution, in a way that ringforts could not in the unstable political milieu of the day. This research is focused on the Diocese of Tuam, centred on Tuam, which was a centre of exchange in this period, with a high cross being erected to delineate the boundary of the secular and the ecclesiastical. The role of the church in providing centres of production and manufacture cannot be doubted, especially in the unstable and fragmented political milieu of early medieval Ireland. While market exchange was seen as primarily an urban phenomenon, sites such as Donoughough and Tuam have shown that despite the west of Ireland being largely ignored when talking about the Early Medieval Irish economy, its peripheral nature than and now, mitigates the problem of modern urban development that is common, particularly among the environments of former Viking emporia. I hope, through this work, to provide a framework for further investigation of the early medieval economy, not only within Ireland, but also for other comparable regions of Europe.

TH1-11 Abstract 22

Early medieval urban life in the Low Countries before the 10th-11th c.: approaches and problems

Author - Professor Dries, Tys, Vrije Universiteit Brussel, Brussels, Belgium (Presenting author)

Keywords: diversity, Low Countries, Research

Presentation Preference - Oral

The Low Countries were together with Northern Italy the most heavily urbanized regions of the medieval world. The origin and understanding of this phenomenon has been debated in a long and impressive historiographical debate, involving famous scholars like Pirenne, Weber, Verhulst and others.

Today we agree that the take-off of the successful towns can be related to the organisation and stimulus of trade in the context of power in the 10th and 11th centuries. The debate remains however on how to understand the evolution and character of the urban phenomenon before the 10th-11th century. This debate will always tend to suffer from both teleological thinking towards the road of success and the stress on the question of continuity between Roman centres and later towns. The main problem regarding our archaeological understanding of urban life, fabric and functions seems to be that they can have totally different material translations that might not always be recognisable from the modern perspective. The question is therefore maybe what different forms urban life and functions could have and which methods we need to identify these.

TH1-11 Abstract 23

A town in the making - exploring early urbanity of Copenhagen through the study of social practices

Author - MA Dahlström, Hanna, Aarhus University, Højbjerg, Denmark (Presenting author)

Keywords: Iron processing, social practices, urbanity

Presentation Preference - Oral

Classical ways of defining urbanity are ill-matched with the early phases of a developing town, and indeed often with the archaeological source material at hand. New ways to describe urbanity in a way that is easier to recognize through archaeology are called for. In my PhD-project I explore some new aspects to this problem by studying urbanity through social practices in the first phases of the development town of Copenhagen, Denmark. One of these areas concerns crafting, specifically iron processing. Through four areas of study, I analyse the material remains of social practices undertaken on the site of Town Hall Square c. AD 1050-1300. This paper will discuss the two questions: What can the study of social practices connected to the iron processing activities, in combination with technical analyses, reveal of urban development, of people and networks involved in the iron handling? And what can the role of iron processing have been for the early development of Copenhagen?

TH1-11 Abstract 24

Small town in medieval Russia: the ratio of agricultural, craft and administrative functions

Author - Koval, Vladimir, Institute of archaeology RAS, Moscow, Russian Federation (Presenting author)

Keywords: administrative function, agrarian towns, small towns

Presentation Preference - Oral

Small towns in medieval Russia remains one of the most mysterious phenomena. Unlike the cities of Europe and the Orient, the medieval (11-16 cc.) River structures founded towns in Russia primarily as administrative points. Therefore agricultural component of their life was most vital. However, these towns soon transformed to centers of trade and crafts. If this transformation did not occur, town became unviable died quickly. But the ruralization of life persisted in many towns to the 20th c.

TH1-11 Abstract 25

Medieval Oslo Revealed: Latest results from the Folk line excavations

Author - Nordlie, Erlend, Norwegian Institute for Cultural Heritage Research, Tårnøsen, Norway (Presenting author)

Keywords: Excavation, Medieval, Oslo

Presentation Preference - Poster

We present the latest finds from the old town of Oslo. The Folk Line railway development will cut straight through the centre of the medieval town, and has given archaeologists from the Norwegian Institute for Cultural Heritage Research the opportunity to excavate an area not previously investigated, which lies between the commercial and residential areas to the east and the harbour to the west, and the religious and royal residences to the north and south. So far we have found remains of possible houses, warehouses and other urban infrastructure. The excavations will be concluded at the end of May 2018.
COSTUME COMPLEX (CLOTHES AND ITS ATTIRE): DEVELOPMENT, RELATIONSHIPS, FORMS AND TECHNOLOGIES IN TIME AND EXPANSE

Friday, 2 September 2016, 09:00-16:00
Faculty of Philosophy, Room 207
Author - PhD Zhilina, Institute of archaeology RAS, Moscow, Russian Federation (Presenting author)
Co-author(s) - Steponaviciene, Daiva, Director, Public Institution “Vita Antiqua”, Vilnius, Lithuania
Co-author(s) - Lazar, Catalin, National History Museum of Romania, Bucharest, Romania
Presentation Preference - Oral

The report is devoted to sewed jewelry of an Old Russian costume, they typological characteristics, location and appointment in a dress. Sewed metal jewelry is characteristic both for the noble and for a domestic costume. In a noble costume the plaques of various forms sewed to clothes were widely used. Sometimes the whole sets of plaques of several types formed the ornamental friezes, which were settling down in cervical and breast zone. Similar sets are a part of hoards and come from a number of city and rural burials for example, the hoard from Tocnok, burials in the Tver Kremlin, in St. Sophia Cathedral of Novgorod, in Desiatinnaia church of Kiev, burial grounds Lipniskiy (the Kurisk region), Novinki II (the Vologda region, etc.). The archaeological studied stand-up collar, decorated by sets of plaques, are most numerous. Sets of plaques, apparently, were ripped off and reused. In a dress of rural people the sewed jewelry of various forms was used. First of all, it was suspension brackets of various forms: chains, bells, tiny suspension brackets, the trapezoid, drilled stones, seeds, and also knaves. All things were suspended on rings, which were sewn to clothes. The location of attached jewelry has certain regularities. First of all, it is a breast zone, and also shoulders, belt, in some cases – a skirt zone.

Chains as a rule settle down on one shoulder; asymmetric. Most likely, their ritual value as to such chains suspension brackets amulets and daggers fasten. Among other sewed jewelry the bells draw attention. There is a series of burials, in which the bells settle down in a certain order. They can be considered as markers of structure or a cut of clothes. The following options of a location of bells are allocated: on rings on shoulders, symmetric; to the line across a breast; in the zone of a belt; in some horizontal lines in the zone of a skirt. Probably, the linearly located bells ornamented edges or connections of separate parts of clothes. Symmetric jewelry on the shoulders testifies the shoulder clothes, perhaps, like a Russian traditional sarafan. Ways of fastening of the sewed jewelry can be various: by woolen threads on rings; by thin leather laces. It is obvious that the set of metal sewed jewelry made heavier clothes. Besides, there was a need repeatedly to alter jewelry. Materials of hoards and burials, undoubtedly, show a festive clothes, and funeral, which could correspond a lifetime festive costume. The sets of festive clothes were stored together with the sewed jewelry that excludes need to unpick repeatedly jewelry from clothes. Such details as collars, could be ripped off from clothes entirely and keep together with the sewed plaques. Such practice remained later. Lists of a dowry and the bequeathed things quite often include the removable and cut-off details. In the XV-XVII centuries, metal details give way to pearls, golden-sewn stripes and lace and metal plaques, which were also of great value and were transferred from one cloth to another.
Women's funerary dress in 12th-century North Estonia.

One costume – complex meanings.

Female textile funerary equipment can take very different forms and functions. They include both woven and knitted fabrics, female garments, funerary equipment, textile in 19th century (Biala Rawska - Poland).

The variety of female textile funerary equipment from nineteenth century (Biala Rawska - Poland)

The aim of the presentation is the identification of similarities and differences in the 19th century funeral textile equipment of two women, forms of clothing, typefaces, type of additives and manufacturing technology used fabrics.

Funerary garment of the first woman (coffin No. 9) was the silk, long apron dressed on linen shirt, which cuffs was decorated with ribbons. Apron was made of 26 pieces (simple textile with plain weave 1/1) having different sizes and shapes (rectangles, triangles). At the lower edge of the apron was silk hem 90 mm wide. Apron was seen very precisely used silk threads. Repeated use of that garment confirm the tight seams connecting the individual elements. Costume was completed with long, silk, knitted gloves and shoes with textile uppers. Upper shoes were made of patterned fabrics and decorated with ribbons. Second woman's garment consisted of a silk dress with a complicated cut and numerous haberdashery. The dress consisted of a bodice with long sleeves and seen into it, heavily a gathered at waist long skirt. The dress was seen a dense, carefully stitch. Bodice consisted of 12 elements, two at the front (front left and right), the two at the arms (constituting mirror images of each) the eight at the left and right rear portion (also constituting its mirror image).The skirt consists of 7 elements: two located on the left front, two on the right front, and a single central rear portion considerably elongated. Left side is a mirror image of the right side. Fabric used to sew a dress has an area approximately 5 square meters. The head of the dead woman was laid on a pillow with a thick pillowcase. Pillowcase was made from a single piece of fabric (front and rear portion are of the same shape), but in the course of many years, the bottom portion has been destroyed, so archaeologists recorded two separate components. Pillow shape is similar to a quadrilateral with rounded corners. The maximum height is 470 mm, the maximum width is 510 mm. Around the edges either the front or rear portion is silk ribbon. The band is now a dark brown color. In addition, between the edges with the ribbons was seen decorative frieze.

Attire of the adornments: the main historical stages:

I. Natural attire: the main historical stages:

Natural attire originated during primitive era, its elements were preserved in ethnographic suit. Adornments were made of available natural (animal and plant) materials, but artificial materials (ceramics, glass, textiles) were beginning to be used. Adornments mainly decoratively the body, their forms correspond to its parts: head, waist, belt, bracelet. The joining between adornments made by wrapping, tying, stringing, piecing.

Variegated colors were used, images of the natural world were reflected. Sacred and aesthetic functions were in unity.

Heavy-metal jewelry has existed since the era of metal (Eneolithic, Bronze Age) and during early Middle Ages. Heavy and numerous adornments of non-precious metal produced by forging and casting, fastened and kept draped clothes on the body uniting with it into a single structure. The attire of Finno-Ugric peoples fully represented this stage.

Some things played the role of hard case (spiral and holder) or of supporting framework (head hoops), others cover cloth with metal layer (sweat and hanging plates, interwoven spirals).

Attire played on pre-stylistic level, adornments from different regions are similar. With the increasing of complexity of techniques first styles appeared (polychrome and carved styles, styles of champlevé enamel and of cloisonné incrustation).

Conductive function and sacred protection were important. Metal details the best way perform the function of protective noises by jingling. III. Jewelry attire is typical for class society, for developed Middle Ages. Jewelry is made of precious materials in difficult jewelry techniques (cloisonné enamel, niello, filigree). Byzantine and Russian medieval attires are the examples.

Jewelry items are linked together structurally and stylistically, their connection with clothing is typological. Silver bell-shaped pendants and back head net complemented Russian compound headdress (“kichka”). Gold diadem in cloisonné enamel complemented band headdress.

Conductive connection of jewelry and clothes became not very important, though sometimes was preserved.

On the basis of fine and peculiar jewelry techniques original art styles and ornamental elements formed. Art images were able to reflect the symbols of concrete religions. Sacred and aesthetic functions are equally important.

The accessory attire is characteristic to the New time and modernity. Adornments are made from the variety of materials and in every possible techniques, exist as other costume accessories, and even become not required.

Items are linked stylistically and with color harmony. They complement the suit, can be replaced and changed, they are rather independent from the structure, style and typology of the suit.

Jewelry comply to the fashion and artistic trends of time, in most cases they do not have any semantics, except parting in sign suit related to specific events and subcultures.

The main function is aesthetic. The attire is becoming more individual and formed by concrete person. The report is accompanied by examples of the hat and costume jewelry.
Jewelry: decoration or a detail of construction? Theory and practice

Author - PhD Stapanosecnica, Daiva, Pl Vita Antiqua, Vintiu, Lithuania (Presenting author)
Keywords: construction, costume, jewelry

Archaeologists, having found ancient jewelry in the burial monuments, most often regard it as a decoration element, classify and typologize it according to the shapes and ornamentation. Mostly only the metallic decoration details remain from all the attire set or, generally speaking, costume. It is not an easy task to recreate the costume itself with no preserved organic material – textile and leather, though the task is made easier by knowing the jewelry’s relation position to the skeleton.

In this way, the position of the brooches makes it possible to guess what kind of clothing was pinned with it – lapels of the blouse, sides of the coat, corners of the cloak; pins with pendants and chains tell us the style of the women dresses; the shape of the bracelets let us understand the cut and the length of the sleeves; some types of neck rings let us assume about their function of fastening the cloaks; decoration details found in the area of the head give an image about the shaping of hair or one or another variant of the headdress; even the rings, their decorations, the contents of the bead necklace may indicate the ownership of a certain person. It is noted that among thousands of archaeological findings, despite their stylistic uniformity, specific to one or another chronological period, there are no identical items: all differ in both size and ornamentation, thus, being a possession of a certain person, they may have been recognized by others and used to prove an absent person’s delivered messages’ validity.

Sometimes the dead are buried wrapped in the sheet, which was also fastened with brooches or pins; also sometimes additional jewelry (several neck rings, headbands, rings) was placed into the grave and not always in the anatomical order, but beside the head, on the legs. This aggravates the research of the costume’s construction.

Textile researchers determined that the fabric for the clothes until the Medieval times were woven with plain colors, not striped, not checked; the patterns were made using the yarns of one color for the warp and another color for the weft, the edges of the clothes were reinforced with woven multicolored bands. In this plain-colored costume the brass and silver jewelry would especially splendidly expose. Themselves being the works of art, they had another, much more important function – the formation of the costume, the connection and fastening of its details.

The report is intended to emphasize the functionality of the jewelry, having practically checked the theoretical assumptions by reconstructing the wear of the different periods and trib.

Costume of deads or costume of livings?

Author - Dr. Ciuperc, Bogdan Iosif, History and Archaeology Prahova County Museum, Ploiești, Romania
Co-author(s) - Dr. Magureanu, A., Institute of Archaeology Vasile Parvan, Bucharest, Romania (Presenting author)
Keywords: early middle age, from object to costume, social meanings

The aim of this paper is to analyze the representation of jewellery on mosaics from Roman Africa. Through comparing them to artefacts found in the area of Roman Empire, it is possible to observe traditions in Roman jewellery and changes happening over the years, as well as discover local trends and their relation to Empire-wide patterns. The richness of landowners and their wives is emphasized by clothes and jewellery which they wear, showing to Imperial and even divine prototypes, so it is possible to notice a clear relationship between forms of dress and the position within social order. Sometimes those traditions reached far back in time than the existence of the Roman Empire, for example the representations of chausses for jewellery (zyxides) which are known status symbols already on Classical Greek grave-stakes.

Small adults – forms of children clothes until 2nd half of 18th c.

Author - Grupa, Dawid, Institute of Archaeology, Nicolaus Copernicius University Torun Poland,

Keywords: child clothes, copy, reconstruction

In the space of the centuries, obligatory trends in fashion influenced greatly the outlook of representatives of different social groups. Changes in adults’ outfit were also reflected in types of clothes worn by children, especially in case of noble families and social elites. Thanks to numerous archaeological material referring to children burials, we are able to trace the changes in children fashion as well. In many instances, special grave robe was replaced by casual clothes.

Detailed analyses of clothes fragments enable to identify various children clothes’ forms by descendants of the elite up to 2nd half of 18th c. Many family portraits present repeatable fashion of depicting fathers and sons dressed in identical male attire or mothers and daughters, which dresses were smaller variations of models worn by mothers. Similar references can be observed in child burials, where the offspring was put to grave in everyday clothes, even in accordance to fashion of the parents’ clothes. Children needs were neglected, their garments had to reflect their parent’s wealth only. That tendency had frequently negative effects on proper development of the youngest members of the society. That trend is observed till the end of 18th c., when changes in pedagogy rules were slowly introduced, thanks to which child clothes were adjusted to proper child age, body building and development, providing free body movement, necessary for proper development of young organisms. First clothes of that type appeared in England and France and the trend spread next to other European countries, putting an end to many centuries tradition of dressing children in copies of their parents’ clothes.
Late Bronze and early Iron Age costumes in the Southern Baltic: unknown and unexplored

Author: Dr. S. Skarsd, Karskaja, University of Gdansk, Gdansk, Poland (Presenting author)
Keywords: female/male costume, LBA/early Iron Age, Southern Baltic zone

Presentation Preference: Oral

Except for some specific times and regions or very specific context of organic material preservation archaeologists do not have much chances to study costumes of past societies. Most of our knowledge come from proxy data like jewellery types and its distribution within inhumation graves, rare representations of human figure or fortunately survived pieces of clothing. But still we can see that nowadays we are dealing with every-day or ceremonial costumes of human or divine being.

However costume is not just a means of protection against environmental conditions. Most of all, it is a powerful tool of communication, regulation or forming social practice. And therefore our limited knowledge about the costumes used in specific times limits also our knowledge about social sphere. Funeral tradition of the late Bronze and early Iron Age Central European groups make the situation even more complicated. Not only cremation left very little evidence for studies on costumes, but barely complete absence of human figure representation in the Bronze Age makes almost impossible to speculate about the clothes that were worn at that times at any occasion. The situation changes a bit during early Iron Age with the emergence of face um tradition and human figure representation when at least in funeral sphere we can observe the emergence of welldefined set for men and women.

The main aim of this paper is to analyse the late Bronze Age and early Iron Age data from nowadays Poland for potential proxy data for identification of the elements of costumes and further studies within the scope of male/female suits as well as everyday and ceremonial costumes.

Women's headwear from the burials of the III-IV centuries in Sudzial Opuloe

Author: Dr. Zaytseva, Irina, Institute of Archaeology of RAS, Moscow, Russian Federation (Presenting author)
Keywords: burial rite, headwear, Migration period

Presentation Preference: Oral

In 2007-2010 the Institute of archaeology of the Russian Academy of Sciences has conducted the archaeological investigation of the Migration period necropolis Bolshoe Davydovskoe 2 in Sudzial Opuloe. In the small cemetery 18 burial pits with 23 burials were excavated. They performed the role of inhumation. Funeral rite, grave goods and the parts of the clothing allow us to attribute the monument to be a part of Riazan-Oka culture. The burials can be dated to the end of III-IV cc.

According to the anthropological remains and the presence of decorations is determined that 9 adult individuals are women. Remnants of headwear found in 5 of them and in one burial of girl 8-10 years: 2 women were buried wearing head corollas of different type: in one burial, it was a ribbon, fastened with an iron buckle. It was decorated with glass beads, small bronze rings and fragments of jungung pendants. In another burial the corolla consisted of a ribbon with attached plates with rings, decorated with pearl ornaments. According to the observations of I. Belotserkovskaya, similar clips with rings appeared at the end of the I-II cc. In IV-V cc. they have proliferated and are becoming an indispensable part of the corollas and occasionally necklaces from the population of Riazan-Oka culture. T. Kravcheko believed that the head corolla put on the top of the textile shawls, which were a part of female headdress. 3 persons had the head decoration of a different type: these were clusters of oval bronze clamps that were closely strung on cords with small wire rings and semicircular plaques. Probably cords with clips and small ornaments were sewn onto organic bases (leather, textile?). In all these burials near the skull found a pair of large cylindrical temporal rings with blade. The presence of complicated, often multi-layered women's headwear is one of the characteristics of funeral rites in cultures of Finno-Ugric type, continuing over a long period of time from the Migration period to the late middle ages. T. Kravcheko, N. Trubnikova and I. Belotserkovskaya made a reconstruction of the typical headwear of female burials of the early phase of Riazan-Oka culture. Mostly it's a cap of leather or textile with a rigid skeleton, represented by the bronze plaque or bast. Caps were decorated with sew on badges and straps with bronze spirals. Bronze-cylindrical temporal rings with blade were attached to hats. At the back were often fastened with a brooch with jungung pendants.

The hats from Bolshoe Davydovskoe 2 are something different in design. The complexes have no fibulae, which could be used for attachment of the temporal rings, no round plates to a rigid foundation. Belotserkovskaya indicates to a rare variety of soft caps without metal plates but with small plaques sewn on. Probably found all the hats belong to this type. We have no evidence of the textile shawls.

New data confirms the thesis by I. Belotserkovskaya about the syncretic nature of the early Riazan-Oka women's headdress, which combines features of various groups.

Two costume assemblages from the Dnieper region: on the reconstruction of identities

Author: Dr. Rodinovka, Vlada, Institute of Archaeology Russian Academy of Sciences, Moscow, Russian Federation (Presenting author)

Presentation Preference: Oral

In Soviet and Russian science “identity” in relation to archaeological materials is traditionally considered mainly in ethnic context. Only some recent studies deal with other aspects of the problem - social, professional, religious, gender, age identity, etc. Most of them are based on the analysis of jewellery and clothes accessories.

Bright phenomena in the history of material culture of Eastern Europe are two costume assemblages, known in the Dnieper region in the Roman and Late Migration periods. A set of jewellery from the so-called range of East European enamelled ornaments is mostly dated to the second half of the III – I c. AD. In the Dnieper region such items are connected with Late Zaporizhstvo and Kiev cultures which are considered as Proto-Slavonic by the majority of modern scholars. The area of enamelled ornaments as a whole includes also the Baltic, Volga, Kama regions, the Crimea and North Caucasus. Wide spread of these objects in Barbaricum can probably mark some general processes occurred in a considerable part of Eastern Europe, in which Proto-Slavonic tribes were involved along with other groups of population. The nature of these processes, however, is unclear. Usually enamelled items are represented as stray finds or come from hoards, which show a set of things, but not their correlation and positions in a costume. This complicates the attribution of concrete ornaments and determination of identities (social, professional, age, sex, etc.) which they may reflect.

At the end of the VI – VII c. AD another jewellery assemblage has been extended in the Dnieper region, which is known as “decorations from the circle of the Martynovka hoard”. It belonged to bearers of Khotyn or Pen'kovka cultures that are considered to be a part of the eastern Slavs. Martynovka-type ornaments come also from several nomadic burials. Today there are two main hypotheses explaining the fact that the same attire was used by different ethnic groups of population. According to the first, this assemblage marked the formation in the Dnieper region of a new social identity and manifested the belonging of its owners to a certain socio-political structure. According to the second, it reflected the emergence of professional community of jewellers, whose production determined the local fashion. Combining both hypotheses, we can assume that joint activities of several jewellery workshops was carried out under the protection of the power structure, which “made an order” for the creation of a new costume as a visual display of its existence. The assemblage includes male and female costume accessories. Their further study allows to identify social, age, marriage and other status of their owners.

Despite the considerable time gap, the set of enamelled ornaments and the Martynovka-type female attire show significant similarities in the structure and in the forms of a number of artifacts. Perhaps it reflects a continuation of local costume traditions (probably in a cut of clothing, embroidery, applique and other forms, which are not fixed on the archaeological materials of the Dnieper region) for more than 500 years.

Sasanian influence on the Chinese and Central Asian textiles

Author: MA Kosowska, Dominika, University of Warsaw, Otwock, Poland (Presenting author)
Keywords: China, Silk Road, textiles

Presentation Preference: Oral

From 8th to 14th century silk textiles produced in Asian and European workshops were very often decorated with the motive of confronted animals standing on the floral ornament. The scene is usually put in metaldehyde-decoration. It is believed that this convention had its roots in Sasanianweaving tradition, but the oldest depiction of it is known from “jin” fabrics discovered in Tufan oasis (Xinjiang) and Dunan (Qinghai). Because of its technical features [warp-faced compound bobbin] is obvious that they were made in Chinese workshops. Some components of the motive depicted on these textiles are pure Sasanian (animals decorated with flying ribbons, pearls metalisations), but after analysis of the Chinese weaving, I assume that other aspects had been rooted in Chinese tradition (for example antithetic position). These two schools of weaving were under influences of each other especially because of Sogdian trade activity on the Silk Road. This Sasanian-Chinese convention was introduced into Central Asia in 8th-9th century (especially to Sogdiana), and then was adapted in Muslim and European art.

Possible reconstruction of female dress in Grobin- Baltic influence and Scandinavian fashion

Author: Mg. hist. Santa, Jansone, University of Latvia, Riga, Latvia (Presenting author)
Keywords: archaeology, dress, Scandinavia

Presentation Preference: Oral

In the late 5th-6th centuries the Baltic groups of tribes left traces in the territory of modern Latvia, in the eastern part of the Gulf of Riga. This is why the archaeological investigations in these areas are connected with the analysis of the Baltic identity. A very interesting object was found in a female burial from Grobin in Parnawa (Latvia) dated to the early 6th century AD. A very unusual, and at that time absolutely unique element of the female costume was a ring of iron rings on the left side of the chest. At the moment, this has no analogs in the Baltic or the Scandinavian material. It allows to assume that this individual was very important for her community. The combination of Baltic and Scandinavian elements could be a way to show her social and cultural identity. Therefore, the object could be seen as a symbol of her social status and role in the community. The purpose of this paper is to present the reconstruction of the female dress of this young woman from Grobin, putting an accent on the elements of Baltic and Scandinavian influence.
The dress has an important place in any research about people from particular time period and location, as it holds a lot of information about its wearer. In historic and ethnographic literature dresses have long been recognized as an indicator of group affiliation.

The purpose of this paper is with the use of available knowledge from burials, literature, and images to draw the possible look of the well off Grobin woman in the 7th - 8th century. Unfortunately, during this period, mainly cremation burials are used for women, thus adding to the difficulty of reconstructing such dresses. Some later evidences from Sweden and Denmark are used, although with limitations, in the process also new evidence to Scandinavia Fashion has been detected and further analysed, thus trying to determine how far one has influenced the other. It must be noted that this is only hypothetical version lacking definitive proof in form of actual archaeological finds, although backed by strong supporting evidence.

TH1-12 Abstract 18
Formation of Jewelry types in Balto-Slavic border zone in the 12-13 centuries (Based on settlement Maskovichi)
Author - PhD Varatinova, Mrska, National Academy of Sciences of Belarus, Minsk, Belarus (Presenting author)
Keywords: costume, decorations, medieval
Presentation Preference - Oral
Exposure collections of famous archaeologists Ludmila Dychta and George Shishyova in the Department of museum ancient Belarusian culture emphasizes the aesthetics of medieval clothing. Group objects (more than 100 units) with mounds of Polotsk land frontier emphasizes ethnic aspects of development early Middle ages (suspensions types, beads). On a material settlement Maskovichi during the XII-XIII centuries is clearly the organization of agricultural and solar symbols in stable circuit (zoomorphic images of the horse, crescent). They have evolved and entrenched in artisan products XIII-XIV century. Borderlands allows materials to demonstrate a certain stage of coalescence of eastern European tribes, exposure to stress by means of a multiethnic ornamentation of the territory. Two types of head adornments have been identified: headgears with and without hanging ornaments. A headgear constituted the main part of the costume, which is represented by the marked top of a head as a place for ornamentation.

TH1-12 Abstract 19
Jewellery workshop in the medieval Smolensk
Author - Murenova, Tatyana, The Institute of archaeology, Butyrinova, Russian Federation (Presenting author)
Keywords: Archaeological excavations, Jewellery workshop, Medieval city
Presentation Preference - Oral
The report focuses on the work of the Smolensk archaeological expedition undertaken in the summer of 2015. The purpose was to determine the time development of the area in ancient period. A pit filled with waste jewelry production middle – 2nd half XI century was found. In the fill of the pit contained many fragments of smelting crucibles, and also same almost entire instances. In addition, were found metal objects associated with jewellery production. The report provides a description and analysis of find as well. All these findings, the mass and concentration in the small hole indicate the presence nearby of areas with ancient jewelry manufacturing. These findings allow us to make important conclusions and to supplement information about the city’s history.

TH1-12 Abstract 20
Andronovo Costume: Headgear and Ritual
Author - Senior Fellow Usmanova, Emma, Saryarka Archaeological Institute, Reserve Park "Ulytau", Karaganda, Kazakhstan (Presenting author)
Keywords: Ancient ritual, Andronovo culture, Headdress
Presentation Preference - Poster
Female’s costume attributes of Andronovo culture consist of jewelry, woven fabrics fragments and leather, mainly belong to the head decorations. Andronovo community is assembling of steppe cultures of Inner Eurasia belonging to the Bronze Age dated to 2500 – 1300 BCE. Thus far, approximately 30 burial sites have been investigated that contained preserved remains of female’s headdresses (Ural-Kazakhstan zone). Two types of head adornments are identified: headgears with and without hanging ornaments. A headdress constituted the main part of the costume, which is represented by the marked top of a head as a place for the concentration of a vital force. The headdresses usually points toward the age, social status of the diseased. A headgear with the minimal elements was belonging to girls under 10 years old, while richly decorated headdresses belonged to individuals of the fertility period of over 15 years old. Headdresses have been found in the following positions: detached head, re-deposited backbone, complete backbone. Some of the burial has been penetrated post-burial in order to remove the headdresses: backbone has been found without the skull or with a partially destroyed skull. It is possible that the headdresses was an ancestral relic which passed on from generation to generation; in some case it was left in the graves, in others removed.

TH1-12 Abstract 21
Peruvian textiles in Warsaw National Museum
Author - MA Kosowska, Dominika, University of Warsaw, Otwock, Poland (Presenting author)
Keywords: Paracas, textiles, Wari
Presentation Preference - Poster
Four fragments of pre-columbian textiles are part of Warsaw National Museum’s collection. Two of them are colorful embroideries depicting flying creature characterized to Paracas culture (late Nencopids: 500 B.C. – 200 C.E.) and other two are tapiz fragments woven in Wari state (500 – 1000 C.E.). Embroiderers (plain stitch looped behind) are similar in style and it is very probable that they were pieces of the same material. Analogical fragments are part of collections of Metropolitan Museum of Art in New York. These types of embroideries were depicted on the big blankets - mantles, which were part of the fardos - funerary bundles. Two tapiz fragments were originally sewn into the small purse (tapiz in shape), which were also typical burial object. Its ornamentation is very schematic – geometrical, colorful designs. Pre-Columbian textiles fragments from Warsaw National Museum are very well preserved and they are one of the most beautiful Peruvian fabric in polish collections.

TH1-12 Poster
Collar of the 17th century. The find of the settlement of the Novodevichy Convent (Moscow)
Author - Elksina, Irina, Institute of Arheology of RAS, Moscow, Russian Federation (Presenting author)
Keywords: 17th century, collar, Novodevichy Convent, Costume complex (clothes and its attire)
Presentation Preference - Poster
During the archaeological work in 2014 under the leadership of L.A. Belyaev in the settlement of Novodevichy Convent (Moscow) necropolis of the 17th – 18th centuries was studied. Among the burials the burial of a man of 55-60 years was of great interest.

In the burial, numerous textile fragments, forming the shape of a trapizoid, were found around the head and shoulders. Metal buttons – dumb-bells and baptismal cross were fixed on the chest. In the area of the belt there was a rectangular buckle. A comprehensive study of textile remnants shows that they are the remains of collar clothes, made in the technique of golden embroidery on the red velvet. The main patterns of the embroidery ornament are vegetable branches forming sharp oval stamps, as well as elements such as tulp, bugle brass, pomegranate flower, typical for the Turkish fabrics of the 17th century. Phelonion (a sleeveless vestment) had high solid collar of trapaezoidal shape. Trapaezoidal shape for the collar is characteristic for priests’ garments (clakob). Preserved in the burial pieces of gold embroidery and the presence of spherical buttons, buckles, their location in the burial give the possibility to partially reconstruct the shape of a phelonion. The main fabric of phelonion has not been preserved, but the position of the buttons in the burial lets assuming that the cloak was long, and its front edge was fastened with buttons. This is typical of the ancient type of phelonion.

Based on these studies a color graphic reconstruction of ornamental patterns and design of the collar was performed. Phelonion collar was performed by high-end skilled workers, and certainly is a striking example of the Russian decorative art. Ornamental pattern of the collar and the nature of gold embroidery execution relate to the 17th century.

TH1-12 Poster
Jewelry from Germanic graves in Krakovany – Stráža (Slovakia)
Author - Mgr. PhD Danova, Mirolaya, University of Trnava, Department of Classical Archaeology, Trnava, Slovakia (Presenting author)
Co-author(s) - Krupa, Vladimir, Balsenological Museum Piešťany, Piešťany, Slovakia
Keywords: decorating techniques, goldring, Krakovany
Presentation Preference - Poster
The Balsenological Museum in Piešťany (Slovakia) acquired goldring from grave of noble person in Krakovany – Stráža (Slovakia). The ring was found by brickwork employees in 1900’s but it have disappeared for almost 80 years. Analysis of decoration techniques confirms that the ring comes from Germanic workshop inspired by Romans. Ball decorations made of silver, golden and silver clasps from the grave II are decorated with identical motifs.
TH1-12 Abstract 24

Burying parishioners at Köyliö, Finland – Aspects on attire and burial habits

Author - Doc. Lipkin, Sanna, University of Oulu, Oulu, Finland (Presenting author)
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- Uotila, K., Munttutkimus ky, Kaarina, Finland
Keywords - Early modern, Textiles and accessories

Presentation Preference - Poster

Burying deceased parishioners beneath the wooden church floor was a common practice for approximately 50 years at the church of Köyliö, built in 1752. Due to church renovations during the summer of 2015, a number of burials were surveyed and excavated as part of a salvage effort due to the risk posed to the remains, with an unknown number of burials remaining in situ. The dry and well-ventilated microclimate beneath the floor resulted in exceptional preservation levels for both human remains and their accompanying textiles. This is a rare occurrence in Finnish church studies, as textile materials require unique and often extreme environments for preservation. The funeral attire at Köyliö represents both social and symbolic aspects, contrasting the life and death of these individuals. The sample includes two elderly women, a middle-aged man and three children. Based on their attire and various ornaments we may look into the social-ranks of the deceased. Additionally, the selection of cloths and accessories, their manufacture and materials in addition to the plants used to mask the smell of decomposing bodies under the floors, we may read both official and folk religious approaches to considering death and the deceased. Written sources from this period imply that the practices surrounding the burial of a relative were controlled through various beliefs and laws, which will be used to interpret these burials.

TH1-12 Abstract 25

Archaeology and conservation intertwined – A leather jackets’ journey through conservation

Author - Conservator Gainsford, Sara, Studio Västsvensk Konservering, 41502 Göteborg, Sweden (Presenting author)
Co-author(s) - Lotti, Benjaminson, Studio Västsvensk Konservering, 41502 Göteborg, Sweden
Keywords - 16-th century, Field conservation, Gainsford, Leather

Presentation Preference - Poster

During extensive fieldwork of 2013-2014 more than 750 graves were excavated and thoroughly documented in Gammelstad, Göteborg. The unearthed remains are the former inhabitants of the early historical city of Nya Lödöse (1473-1824). Concurrent burial tradition and custom in Sweden required very few, if any personal items to be deposited in a grave. The excavations however have revealed a rare number of artefacts or clothing. During excavation of a buried individual an excavating archaeologist ceased digging when traces of leather were discovered on and around its lower extremities. The projects on-site conservator was able to identify the leather, and could therefore instantly develop a strategy for the retrieval of the objects. Both conservator and archaeologist worked together to isolate the presence of the leather; that seemed to be primarily concentrated around the upper body. The leather was much degraded and a decision was made to lift the entire upper body in a block and continue the excavation in the conservation studio. Excavation of the leather and the individual was conducted using water, soft brushes and tools. When the first layers of clay and sand were removed it became apparent that this was in fact an individual buried in a leather jacket. In order to fully understand the jackets construction it was decided to remove it from the individual. Osteological analysis revealed that the jacket belonged to a 20 year old man. Once separated textile conservators continued the excavation and conservation of the jacket by cleaning and flattening the different pieces and fragments. As previously predicted the leather was in a much degraded state. However, some typical features were exposed and a pattern was traced and then constructed. References pertaining to the jacket place it in the fashion of the second half of the 16th century.

TH1-12 Abstract 26

Selected examples of funeral costumes from the Merovingian burial ground of Rommerskirchen

Author - Baumann, Nadine, German Archaeological Institute, Frankfurt, Germany (Presenting author)
Keywords - funeral costume, merovingian, textiles

Presentation Preference - Poster

In the period from the late 5th to the early 8th century, which was marked by political, cultural, social and economic changes, funerary communities between northern Gaul and Pannonia buried their dead in large cemeteries (Rrommerskirchen-Eckum). The complex tombs and extensive features of the dead in the graves – this includes jewelry for women, weapons and equipment for men – provide a detailed picture of the burial process into which social and religious aspects blend. The burial ground of Rommerskirchen-Eckum, one of the few fully excavated row cemeteries in northern Rhineland, belongs in this context. On the basis of numerous soil blocks and their careful excavations and analysis and three major conferences in the Landesmuseum Bonn, detailed observations on exact situation of finds and find complexes, and their microstratigraphy are possible. The exchange with conservator and textiles analyst provides an important contribution to the overall archaeological evaluation of costume complexes in this doctoral thesis.

Based on selected tombs of the burial ground, this poster presentation will illustrate funeral costumes for women and men in early medieval Rhineland. Due to the specific preservation conditions organic material survived only in connection with metal, for this reason only burials with a functional connection between clothing and textiles (such as brooches and buckles) or jewellery (particularly bracelets and earrings) can be taken into consideration. Apart from some additional separate depositions the corpse was dressed in gender-specific clothing.

This is also reflected in the late grave 25 (to 670/80). The young woman wore a fine spun-pattemed garment that was open or slit vertically in the upper body area and closed with two silver press plate fibulae with mask-like heads. The burial also included a gold filigree fibula and a necklace of amethyst, glass and amber beads, silver plate cylinders and disc-shaped gold pendants. Representative for male graves should be grave 388 with extensive weaponry (sword, scarmasax, shield and spear) and multipart belt fittings. Under the belt the deceased wore a tunic-like garment made of diamond twill, while further textiles was found together with feathers (perhaps a lirung or feathers scattered loose).

In both cases the selection by the funerary community of jewelry/weapons, precious materials and fabrics refers to the special social role and display of the corpse and the bereaved. Apart from the relationship of the different costume complexes to each other, this study investigates the standardization or individual composition of the grave goods.

TH1-12 Abstract 27

Clothing in figural decorations on Lusatian culture pottery

Author - master of arts Przymorska-Sztuczka, Magdalena, Institute of Archaeology Nicolaus Copernicus University in Toruń, Toruń, Poland (Presenting author)
Keywords - clothes, Lusatian culture

Presentation Preference - Poster

Among the extremely rich ornamentation on Lusatian culture pottery, most common are geometric patterns in the form of engraved triangles, lines and herringbone motif. Anthropomorphic motifs are not so common. Usually these are very schematically human figures presented in the form of a few lines. So far there are known two finds of Lusatian culture pottery from Polish territory, depicting human figures in more details. First one is from Trzesta Rajdowa, site 1, and the second is from Wencja Górna, site 21. On the first vessel, the characters are dressed in ample robe tied at the waist, which are visible vertical stripes. They can be interpreted either as stripes on the fabric forming a decorative pattern, or as a drape of fabric folds in the shape of peplos. On the second vessel is a human figure in form of a triangle with a schematically shown limbs. On the background triangle are circles. The closest analogies to this presentation are those of the vessels of Sopron in Hungary and Maiersch in Austria. There is also another anthropomorphic motif on a vessel from Gąsawa, depicting two groups of people presented in the form of two triangles touching the tops and filled with diagonal lines. Is it possible that, that is fabric stripes or draping the folds? A similar presentation is on a vessel from Prächtling in Upper Franconia. In this paper I would like to reflect on the possibilities of interpretation of these ornamentations and it is possible to use them in reconstructions of clothes of Lusatian culture.

TH1-12 Abstract 28

Smallclothes: The Construction of a Woman’s Garment from the Late-Paleolithic

Author - Wilson, Kelvin, Kelvin Wilson, Ridderkerk, Netherlands (Presenting author)
Keywords - Costumes, Paleolithic, Women

Presentation Preference - Poster

A female figurine scratched onto a small stone found in 1961 near Geldrop in the Netherlands, and dated to around 9,000 BC, shows her dressed in a loincloth worn low on the hips. A new look at what hitherto might have been thought of as several random lines, suggest they may be instead interpreted as details of the garment’s construction. The resulting reconstruction throws a detailed glimpse on one of the garments worn by Europe’s prehistoric reindeer hunters.
TRADITION AND INNOVATION IN TEXTILE TECHNOLOGY IN BRONZE AGE EUROPE AND THE MEDITERRANEAN

Saturday, 3 September 2016, 09:00-16:00
Faculty of Philosophy, Room 207
Author: Ulanozwa, Agata, Polish Academy of Sciences, Łódź, Poland (Presenting author)
Co-author(s): Siennicka, Małgorzata, The Danish National Research Foundation's Centre for Textile Research, SAXO Inst, Copenhagen, Denmark
Keywords: Bronze-Age Europe, Bronze Age Mediterranean, textile production
Presentation Preference: Regular session

The textile craft, with its complex technology and socio-cultural significance, has been a key craft in the societies of Bronze Age Europe and the Mediterranean. Although complex and socially and economically important, textile technology has been often considered rather traditional and noninnovative throughout many centuries of the Bronze Age.

The present session aims to examine textile technology in search of its traditional and innovative elements, by investigating the evidence of archaeological textiles, textile tools and their changes over time, the botanical and faunal environment, textual sources and the imagery of textiles and cloths. The session will focus on the Bronze Age in Europe and the Mediterranean, although papers on transitional periods from the Neolithic to the Early Bronze Age, and from the Late Bronze Age to the Early Iron Age are also welcome.

We particularly welcome all papers discussing the various aspects of traditions and innovations traced in textile technology, especially those regarding raw materials and their processing, textile techniques, textile tools and equipment, the organisation of textile production and the dynamics of its specialisations, cross-cultural and cross-craft interactions, and changes in the textile craft in relation to socio-cultural transformations of the past societies.

TH1-13 Abstract 01
Bronze Age wool economy: production, trade, environment, husbandry and society
Author: Dr. Sabatini, Serena, Gothenburg University, Göteborg, Sweden (Presenting author)
Co-author(s): Bergnerandt, Sophia, Gothenburg University, Göteborg, Sweden
Keywords: sheep-husbandry, society and economy, wool production
Presentation Preference: Oral

This paper aims at discussing the significance of wool production in the European Bronze Age. The focus is on discussing which archaeological and archaeological material best is used in order to identify, and interpreting the impact wool production had on the society, and the environment. The basis for this paper will be well-documented material from Hungary (Benta Valley) and northern Italy, areas that have clear indications of extensive wool textile production.

The available contemporary written sources from the Mediterranean and Near East bear witness to the fact that sheep husbandry was a vital component in wool based economies. In Europe only archaeological material can guide us to understand the importance of sheep-husbandry and woolen textiles. Strontium isotope analyses that has been conducted on the well-preserved textiles from Scandinavia shows that wool in the same textile came from various geological areas, both probable local and none local. This shows that a complex system of production and trade must have existed in Europe during the Bronze Age. This paper aim discussing the cultural, economic and social role of wool production in the above named regions.

TH1-13 Abstract 02
Manufacturing Traditions in Textile Archaeology
Author: Dr. Band-Burgess, Johanna, Landesamt für Denkmalpflege, Esslingen, Germany (Presenting author)
Keywords: Manufacturing Traditions, pile-dwellings, Textile Archaeology
Presentation Preference: Oral

Research results of the past 20 years have made it possible to recognise traditional manufacturing techniques of textile production from the Neolithic to the Iron Age, representative of the significance of textile products in prehistoric Central Europe. This significance displays a degree of appreciation which goes beyond the ideas we would associate with textiles from a modern standpoint. Within the scope of a large exhibition of 4000 years of pile-dwellings, on display in Baden-Württemberg from 16.04 to 9.10.2016 (www.pfahlbauten2016.de), a key textile find from Pfäffikon-Irgenhausen (CH) has been analysed and reconstructed anew. The patterned textile fragment has been radiocarbon-dated to the Early Bronze Age. It occupies a key position in the textile production between the Neolithic and the Early Iron Age. While correctly identified as brocade in research of the 1930s, more recent publications arrived at erroneous identifications of the technique employed in the manufacture of this piece of fabric. New analyses and a reconstruction of the piece of fabric attest to a combination of weaving techniques which demonstrate the immense significance of textile manufacturing traditions in prehistoric textiles; manufacturing traditions, which did not reduce the textile to a mere carrier of decoration, but which instead recognised appearance and manufacturing technique as a unity.

TH1-13 Abstract 03
Textile impressions on ceramics from the late Neolithic to the early Iron Age in Central Europe
Author: Dr. Banck-Burgess, Johanna, Landesamt für Denkmalpflege, Esslingen, Germany (Presenting author)
Co-author(s): Frei, Karin M., National Museum, Copenhagen, Denmark
Keywords: Bronze Age, Central Europe, Textile ceramic
Presentation Preference: Oral

Due to their bad preservation conditions, textiles represent an unusual find in archaeological find contexts. Impressions of textiles on ceramic appear, however, more often and provide information about textile technology and raw materials. The so-called textile ceramics occur worldwide in all time steps. The objective of this paper is to analyse this phenomenon from the late Neolithic to the early Iron Age in Central Europe. The function (functionality versus ornamental art) as well as the analysis of used raw materials and techniques are up for debate. Silicone impressions, experimental archeology and grouping procedure serve the investigation. In a case study the production technology, the materials and the usage will be analyses in the social context of the Bronze Age settlement Buuszezwo in Poland. This central settlement was integrated into a commercial network and had many different raw materials. The socio-cultural meaning of textiles was probably far more important than we can imagine today, living in a world of textiles mass consumption. Grave findings of web weights illustrate this. This contribution's intention is also to examine the value of textiles in general.

TH1-13 Abstract 04
Innovative or traditional?
Diacronic approach to weaving technology in Bronze Age Greece
Author: Dr. Ulanozwa, Agata, Centre for Research on Ancient Technologies, IAE PAN, Łódź, Poland (Presenting author)
Keywords: Bronze Age Greece, textile production, weaving technology
Presentation Preference: Oral

Weaving in Bronze Age Greece has been acknowledged as highly advanced technology resulting in greatly valued products of supreme quality and high importance to local economies and external trade. Because of the notability time-consuming character of the textile craft and its overall complexity, it is assumed that even slight changes in textile technology (including weaving) must have had a direct impact not only on the properties and presumably the aesthetic qualities of textiles, but also (by effecting the amount of the necessary workload) on economics and social life of past societies.

Traditional and innovative elements in the weaving craft throughout the Bronze Age are not easy to understand based on the archaeological evidence. They may be grasped in presumably progressive changes in the forms of textile tools (namely loom weights) and their distribution which may have reflected the transfer of technical novelties, skills and techniques, and they can be observed in the iconography of fabrics and cloths.

In this paper, diachronic changes and the long-lasting traditionalism of certain types of loom weights are considered and analysed in search of gradual development and ground-breaking novelties of the Aegean Bronze Age weaving technology.

TH1-13 Abstract 05
Tradition and innovation of textile manufacture in Early Bronze Age Greece
Author: Dr. Siennicka, Malgorzata, University of Copenhagen, København S., Denmark (Presenting author)
Keywords: Aegean, Bronze Age, textile production
Presentation Preference: Oral

The manufacture of textiles and garments had a long tradition in the Aegean already prior to the beginnings of the Early Bronze Age. Numerous textile tools, especially spindle whorls and loom weights, are preserved from the Neolithic sites which demonstrate
that spinning with spindle whorls and weaving on the warp-weighted loom were commonly practiced. Plant fibres, particularly linen, seem to have been the main material for the production of cloth and textiles during this period. At some point, most probably during the Early Bronze Age, animal fibres (sheep wool) began to be used in the Aegean on a wider scale. Since hardly any Neo-Minoic and Early Bronze textiles are preserved from the Aegean, we can study textile tools made of stone, bone and clay in order to comprehend technological traditions and innovations in textile production.

One important change in the use of spindle whorls and loom weights their weights, dimensions and shapes may shed some light on alternations in not only fibre use, but also in various spinning and weaving techniques. In this paper I would like to focus on chosen aspects of textile implements from Early Bronze Age Peloponnese.

References:


TH1-13 Abstract 10
Technical Innovation in Flax Yarn in the Northwest of the Iberian Peninsula. The Spinning Bowl
Author - Doctorandia Ruiz de Haro, Maria Irene, Escuela Internacional de Posgrado- Universidad de Granada, Almuñecar, Spain (Presenting author)
Keywords: innovation, Linum usitatissimum, spinning bowl
Presentation Preference - Oral
This paper will discuss two basic concepts in addressing the archaeological documentation of a new technological element, in this case the spinning bowl documented in the Castellano culture located in the northwest of the Iberian Peninsula from the Late Bronze Age to the entrance of the Romanization. These two basic concepts are innovation and technological learn. Through these conceptual tools that enable us to face a research methodology on spinning bowls, which help us answer arises why this innovation and its spread to other areas, although this study will focus on documenting spinning bowl in Castellano cuture. To explain his presence in this geography and chronology, we will investigate on issues related to the use of Linum usitatissimum, textile raw materials relates to this innovation and secondly to open the investigation to their role within the technical chain embodiment of linen thread in the phase of the splicing techniques.

TH1-13 Abstract 11
Woolen textiles from the times of Roman influences, the site in Grudna, Poland
Author - PhD Grupa, Malgorzata, Nicolaus Copernicus University in Torun (NCU), Torun, Poland (Presenting author)
Keywords: import, textile, wool
Presentation Preference - Oral
Textile samples (with sizes not exceeding 2 x 3 cm), sent to The Laboratory of Archaeological Monuments Conservation of the Institute of Archaeology of NCU in Torun were exceptionally interesting when it turned out that they were made of woolen fibres in spinning bowl technique, while the other part imitated, known in later ages, so called gaussa, made in weave 1:1. Technological analyses of the fibres proved their high quality. However, having very few examples of this type of textiles in Poland, we are not able to answer the basic question: is it an import or local production? Information collected from Europe suggest the imported material, but here another question arises – from which direction?

TH1-13 Abstract 12
Biconical ceramic spindle whorls from Maleva mogila near Veselinovo Village, Bulgaria
Author - Vatchev, Todor, Regional historical museum - Yambol, Yambol, Bulgaria (Presenting author)
Keywords: ceramic spindle whorls, Early Bronze Age
Presentation Preference - Poster
The prehistoric Maleva mogila is situated on the left bank of the Tundzha River. It is situated approximately 2 km south-east from the village of Veselinovo in the Yambol district, Bulgaria. The site was inhabited during the Late Neolithic, Early Bronze Age and Medieval periods.
During the archaeological excavations and field surveys, 9 whole kept biconical ceramic spindle whorls were found. Most of them showed similar size and measuring. All of them belong to the third phase of the Early Bronze Age according to Bulgarian chronology (2800 – 2000 BC).
The presented ceramic spindle whorls are connected with the processing of wool. They are heavier than flat spindle whorls which are used for the processing of hemp. The appearance of biconical spindle whorls depict a change in the prehistoric economy during the Early Bronze Age, through a larger breeding of sheep and goats, showing developments in human society during this period.

TH1-13 Abstract 13
The fabric of Bronze Age society: a pilot study on Bronze Age textile production in Hungary
Author - Dr. Kiss, Viktória, Research Centre for the Humanities, Hungarian Academy of Sciences, Budapest, Hungary (Presenting author)
Co-author(s) - Pástiák-Székevi, Judit, University of West-Hungary, Hungary
Co-author(s) - Kiss, Gabriella, Research Centre for the Humanities, Hungarian Academy of Sciences, Budapest, Hungary
Co-author(s) - Szendrey, Vajk, Research Centre for the Humanities, Hungarian Academy of Sciences, Budapest, Hungary
Keywords: Bronze Age, Central Europe, textile imprints
Presentation Preference - Poster
Despite the vast number of textile imprints on ceramics as well as of textile tools (e.g. spindle whorls, weights, spools and needles) from the Bronze Age, textile production – although a key social and technological element of society in this period – has been a profoundly neglected topic in Hungary.

As part of a recent multidisciplinary research project (“From bones, bronzes and sites to society: Multidisciplinary analysis of human mobility and social changes in Bronze Age Hungary (2500–1500 BC)”, http://ri.btk.mta.hu/en/english-submenu-06) launched this year by the Hungarian Academy of Sciences Momentum research programme, our study focuses on local textile production and consumption during the Early and Middle Bronze Age in the Carpathian Basin. The primary goal of our poster is to present the pilot study of this research concerning the technologies used for producing woven and non-woven textiles imprinted on the surface of ceramic storage vessels.
Furthermore, based on the above evidence, the duality of tradition and innovation in textile technology, the organization of production, apprenticeship and the possible emergence of specialisation in the Bronze Age would be examined, as well as how they shaped the socioeconomic life of Bronze Age communities in Hungary.

TH1-13 Abstract 14
Bronze Age (1800–500 BC) textile craft in Estonia on the basis of archaeological sources
Author - PhD Rammo, Riina, University of Tartu, Tartu, Estonia (Presenting author)
Presentation Preference - Poster
Although textile craft is complex, and socially and economically significant, there is little known about textile techniques during the Bronze Age on the eastern shore of the Baltic Sea. In Estonia no textile or cloth remains dated to this period have been found so far. As a result, only indirect evidence such as probable tools (e.g. spindle whorls, bone needles) and textile impressions on pottery can be used to study how the cloth was made. This is also the reason why this topic has deserved only little attention by the researchers.
Textile impressions on ceramic demonstrate techniques of making cloth already in the Neolithic. The tradition to finish the surface of clay vessels with this method prevailed in south-eastern Estonia until the Migration Period. The aim of this study is to gather and systemise all pieces of information concerning Bronze Age pottery with textile impressions, with the focus on differentiating technological variability and pointing out traditional and innovative elements.

TH1-13 Abstract 15
Hallstatt textiles in Poland. Analysis of textile finds from the bi-ritual cemetery in Świebie
Author - MSc Slomska, Joanna, Polish Academy of Sciences, Łódź, Poland (Presenting author)
Co-author(s) - Antosik, Łukasz, IAE PAN, Łódź, Poland
Keywords: bi-rual cemetery, Hallstatt Period, Textiles
Presentation Preference - Poster
Textile production during the Hallstatt period was an integral part of everyday life of societies living on Polish territory. However, discoveries of fabrics are very rare. Textile remains from this period, survived primarily in the skeletal bi-rual graves in Silezia voivodeship. Among preserved fragments of organic finds we were able to distinguish the clothes remains and the elements of accessories. The best preserved and well studied textile remains come from the cemetery in Świebie, Gliwice district.
The locality was accidentally discovered in 1930s, but regular excavations started 30 years later. As a result of the archaeological work, 576 crematory urns and skeletal graves were explored, which provided a rich set of materials. Grave goods are local products, as well as imports from the regions of the South and West Europe. 63 graves contained remains of textiles. Most survived fabrics adhered to metal outfits. In addition, research encountered woven tapes remains, braided ribbons, threads and strings.
Material acquired from the cemetery in Świebie is the largest textile collection from Hallstatt period, discovered in Poland. It waited at museum warehouse until 2015 when Institute of Archaeology and Ethnology Polish Academy of Sciences at Łódź proceed with further studies. Despite the fact that most of fragments were small and mineralized, all undertaken analyses lead to better understanding of textile production in Hallstatt period in Poland, with its innovative and traditional elements.
Comb or a vertical loom? Attempt to interpret the decoration on the urn from Szemud, Poland

Author - master of arts Przymorska-Sztuczka, Magdalena, Institute of Archaeology Nicolaus Copernicus University in Toruń, Toruń, Poland (Presenting author)

Keywords: Pomeranian culture, vertical loom

Presentation Preference - Poster

One of the most characteristic decorative motifs, appearing at the facial urn from Pomeranian culture, are combs. Those most schematically shown in its simplest form, a few vertical lines engraved from the horizontal line. A more realistic had singled handle, circle suspension and sometimes also the details of ornamentation. Combs images were placed on the central parts of urn, on its upper or lower part. Among the researchers any ideas of several vertical lines are interpreted as combs. In this poster I want to draw attention to another possible interpretation of ornamentations on urn of Pomeranian culture from Szemud, Poland. In literature, this image is described as "alleged" comb. It was noted that both the same image, as well as the location of the engraving is unusual for typical combs motifs. If not a comb, then what? According to the author it is a representation of the vertical loom. This interpretation is supported by exceptionally long and densely arranged engraved lines, but most important are located halfway up the three horizontal lines that bring to mind three heddle bars. These elements of the vertical loom for making a more complex patterns.

CHILD’S LIFE – BETWEEN PLAY AND WORK

Thursday, 1 September 2016, 14:00-18:30
Faculty of History, Room 332

Author - Blaževičius, Povilas, National Museum - Palace of the Grand Dukes of Lithuania, Vilnius, Lithuania (Presenting author)
Co-author(s) - Romanowicz, Paulina, Instytut Archeologii i Etnologii PAN Szczecin, Poland

Presentation Preference - Regular session

Children do not have an easy life. Childhood is a time of hard work on child’s own physicality, emotionality and knowledge. Time of challenges, ups and downs. Meanwhile, the vision of the ideal childhood and a happy child usually revolves around carefree fun. And today with all the power we try to hold our children away from concerns. As if we have forgotten that “no pain no gain”. The theme of the planned session is to present archaeological sources of children living in different times and places, with a particular focus on issues of children’s work and play. The spectrum of topics of interest includes children’s toys and games, socialization through miniatures, the presence of children in craft workshops, anthropological study of children’s skeletons of children in terms of physical effort, and all that will broaden our knowledge about the lives of children in the past.

TH1-14 Abstract 01

Bioarchaeology of childhood: Chalcolithic and Early Bronze Ages in Near East, Balkans and Caucasus

Author - Prof. D.Sc. Mednikova, Maria, Institute of archaeology of RAS, Moscow, Russian Federation (Presenting author)

Keywords: Archaeology, physical anthropology, Chalcolithica

Presentation Preference - Oral

Large number of children in early agricultural palaeopopulations was connected with their high mortality. Modern techniques offered new perspectives in study of infantile remains. The collections were studied from excavations in Mesopotamia (Tell Khuwair), Balkans (Tell Yunaiti), Caucasus (Velikent), where infant burials seemed to be especially numerous, by methods of nondestructive microscopy, microfocus X-Ray, by the isotopic analysis. The study was supported by the grant RFFR # 15-06-02098.

TH1-14 Abstract 02

Stress at the beginning of life: diachronical analysis of localized hypoplasia on primary canines

Author - Miltiadedienė, Žydrūnė, Vilnius University, Vilnius, Lithuania (Presenting author)

Keywords: Baltic Sea region, children, enamel hypoplasia

Presentation Preference - Oral

Localized enamel hypoplasia on primary canines (LHPC) is defined as circular patches of thinned enamel on the labial surface. It occurs due to direct physical trauma to the developing canine crown as a consequence of exploratory behavior of infants. Because of its asymmetrical appearance (defects tend to occur unilaterally, and more frequently on the lower jaw) this type of hypoplasia can not be considered as an indicator of systemic stress. However, nutritional deficiencies during pregnancy and in early infancy can predispose to the formation of the defect. Thus LHPC can be used as an additional indicator of population health status and behavioral patterns. However, despite of its potential benefit the defect is seldom reported in bioarchaeological studies.

The aim of the study was to analyze the prevalence of localized primary canine hypoplasia of subadult individuals in selected archeological samples, based on different chronology and subsistence: the Stone Age sample (7500-2600 BC, represented by Zvejnieki site, Latvia), the Iron Age sample (5-6th c.c., represented by Plinkaigalis, Lithuania) and medieval sample (16-18th c.c. represented by selected sites from Vilnus and Trakai, Lithuania). Medieval sample was subsequently divided in three groups, based on different social status of individuals. In total, 134 individuals (336 teeth) were included in the study. All primary canines were visually scored for presence or absence of the defect. The highest prevalence of hypoplasia was found in the Stone Age sample: 38.8 % of primary canines (50 % of individuals) were affected. Children from the Iron Age sample and medieval sample had statistically lower frequency of LHPC (21.1 % and 25.4 % of teeth, respectively, p<0.05). Results also revealed differences in the prevalence of LHPC, according to social status. Children of the highest social rank had lower frequency of hypoplasia compare to children from lower social strata (12.0 % and 27.7 % of teeth with LHPC, respectively). Differences in the prevalence of LHPC most probably reflect changes in the mode of subsistence, and dietary peculiarities of different social strata, although differences in child care practices cannot be excluded.

TH1-14 Abstract 03

Chalkolithic and Early Bronze Ages in Near East, Balkans and Caucasus: Bioarchaeological perspectives

Author - Blaževičius, Povilas, National Museum - Palace of the Grand Dukes of Lithuania, Vilnius, Lithuania (Presenting author)
Co-author(s) - Romanowicz, Paulina, Instytut Archeologii i Etnologii PAN Szczecin, Poland

Presentation Preference - Regular session

Bioarchaeological perspectives of the Chalkolithic and Early Bronze Age (about 5000-1500 BC) period in Near East, Balkans and Caucasus. The aim was to analyze the changing health status of children at various phases of their life cycle. The biological evidence from the archaeological sites was compared with the modern demographic studies in order to gain an insight into the palaeopathological changes. The demographic data from the excavations were complemented with the results of the modern archaeological research on the ancient Near Eastern populations. The health status of the children was assessed by various indices of stress, including the percentage of localized hypoplasia on primary canines (LHPC) and the number of fractures and other injuries. The results revealed a significant variation in the health status at different stages of the children’s life cycle, with a peak in the early infancy period. The comparison with the modern demographic data showed that the ancient populations suffered from a higher prevalence of LHPC, which was attributed to the higher level of stress during the early infancy period. The study also revealed the differences in the health status of the children from different social strata, with the highest social rank having a lower prevalence of LHPC. The results suggest that the ancient populations had a higher level of stress during the early infancy period, which was reflected in the higher prevalence of LHPC. The analysis of the fracture patterns also showed a higher prevalence of injuries in the children from the higher social strata, which was attributed to the higher level of physical activity and play. The study revealed a significant variation in the health status of the children at different stages of their life cycle, with a peak in the early infancy period. The comparison with the modern demographic data showed that the ancient populations suffered from a higher prevalence of LHPC, which was attributed to the higher level of stress during the early infancy period.
Little Bodies at Work: Child growth, development and children's ability to perform work

Author: Dr. Lorentz, Kiri, The Cyprus Institute, Nicosia, Cyprus (Presenting author)
Keywords: childhood, human bioarchaeology, work
Presentation Preference: Oral

Childhood interrupted: Child growth, development and children's ability to perform work is explored to facilitate inferences on children's work in past societies. Current knowledge pertaining to physical effects of work on the immature body is examined. In particular, the understandings reached are brought to bear on the question of Anglo-Saxon children and work. As part of this endeavor, cross-sectional growth data from the immature skeletal remains from Anglo-Saxon mortuary populations of Blackgate, Newcastle-upon-Tyne, and Raunds, East Northamptonshire, are compared. The relationship between delayed growth and pathologies is explored. The growth curves of the two populations are similar, suggesting a similar level of environmental stress, assuming similarity in genetic factors influencing growth. Further, the prevalence of cribra orbitalia and porotic hyperostosis is high in the Blackgate individuals delayed in growth. Behavioural abilities are more closely related to skeletal age than chronological age, which dental age is seen to approximate. Thus, when discussing children's capabilities, particularly in relation to work, the use of skeletal age is preferable to the use of chronological age. Delayed long bone growth may be used in making inferences about the behavioural developmental stage attained by children in mortuary populations, and further, on the kinds of work children at various growth stages may have been able to perform. The possibility of excessive physical activity should be noted alongside the conventional claims of malnutrition and disease when discussing possible environmental causes for delayed growth. Further, contemporary Western ideas should not be employed when constructing theories of childhood work in archaeological contexts. Better heuristic models for conceptualizing childhood, for example in the Anglo-Saxon period, can be found through ethnographies of traditional rural societies. Children as young as three can perform useful tasks in traditional agricultural settings. Many of the tasks adults are known to have engaged in during the Anglo-Saxon period contain elements that were very possibly (also) conducted by children. Further case study material is presented from other temporal and geographical contexts, including the Eastern Mediterranean and the Near East.

Childhood in Pre-Roman central Tyrrhenian Italy

Author: Doc. Lipkin, Samu, University of Oulu, Oulu, Finland (Presenting author)
Keywords: burial of children, nurture and education, play and textile work
Presentation Preference: Oral

Researching children's daily life in Pre-Roman central Tyrrhenian Italy is challenging, as there is minimal archaeological material indicating the presence of children in settlement contexts. The existing evidence on children consist mostly of infant tombs dated between the final Bronze Age and Archaic period. Considering the high child mortality rate, the amount of child burials at necropolises is very low, and the burials of the youngest children (less than four years of age) are mostly missing. However, in Latium and Rome, many infants and fetuses have been found buried at settlement sites. Current research implies that different burial practices may be regarded to have represented different stages of human development children were considered to have, and thus the funerary materials offer an ideal data to explore the status of children in Pre-Roman Eturia, Latium and Rome. This paper will examine, the birth and death, nurture, play and education as well as everyday tasks of children. Even though funerary materials primarily indicate perception of death, it is also possible to extrapolate an individual's roles in everyday life. For instance, textile work was a duty of girls by the latest as juveniles, but both archaeological and ethnographical data suggest that even small children learned manufacturing technologies, perhaps through play. Funerary data proves that even small infants had been bestowed important status within their families, and their enculturation was already in process prior to their death. Socialization through gender roles is also visible through examination of funerary artefacts.

Childhood interrupted: infant burials on Colonia Iulia Emona's northern cemetery

Author: Zupanec, Bernarda, Museum and Galleries of Ljubljana, Ljubljana, Slovenia (Presenting author)
Keywords: cemetery, grave goods, childhood, Late Roman period, children
Presentation Preference: Oral

It is commonly estimated that in Roman era around 50% of individuals born were unlikely to reach maturity. From the sources we can conclude that high infant mortality was connected with lack of attachment, lesser pollution resulting from child death, and possibly, marginal position of children in community. Here, I wish to reconsider these assumptions using a group of Late Roman infant inhumations from Colonia Iulia Emona (Ljubljana, Slovenia) as a case study. Those infant inhumations represent around 20% of all inhumations in the colony's largest cemetery in Late Roman period. They are a consistent group exhibiting similar characteristics in terms of burial rituals and grave construction. Grave goods, when present, often include apotropaic objects, such as phallic amulets, crepundia and nails, connected with mors immortae.
TH1-14 Abstract 09
Getting better. Learning how to nap
at the Early Neolithic Flint mine of Casa Montero (Spain)

Author - Dr. Castañeda, Nuria, Universitat Paris I-Panthéon Sorbonne, Nanterre, France (Presenting author)
Co-author(s) - Casi-Adrián, Pilar, Instituto de Historia-CSIC, Madrid, Spain
Keywords: Casa Montero, learning, Neolithic mining

Presentation Preference - Oral

In Prehistoric times, the opportunity to take part in flint procurement at a mine was part of the initiation process for infants that would gradually become active members of the group. The analysis of lithic remains from the Early Neolithic Flint mine of Casa Montero (Spain, c. 5300-5200 cal BC), where three different skill levels have been recognized, supports the presence of flint knapping apprentices. In order to become part of the community, apprentices had to start working in peripheral tasks before being trained in flint knapping techniques. Therefore, management of waste, selection of raw material, extraction and recycling were probably the first stages of learning while helping. Identifying the waste produced by unskilled knappers in the lithic record is critical in order to discriminate them from the general assemblage. Lithic leftovers are expectedly composed by skilled products and those generated in the learning process. The latter not only reproduced the normalized reduction schemes, but also could eventually contribute to the final production of blades. This paper will focus in the technical criteria used to recognize the remains of unskilled knappers and which kind of previous knowledge must acquire the novice knappers by helping in secondary tasks at the mine. At Casa Montero, limited access to high quality raw material is one of the main features to determine novice knappers at lithic remains.

TH1-14 Abstract 10
Children and animals in ancient Greece; animals as children’s pets, toys or gifts

Author - Dr. Dipali, Anthi, Hellenic Open University, Athens, Greece (Presenting author)

Keywords: animals, pets, toys, gifts

Presentation Preference - Oral

This presentation aims to examine the relation of children and animals, as illustrated by animal-shaped objects used as toys or grave goods, as well as animals used as pets by children from infancy onwards, or being presented as gifts to boys in adolescence (the fourth and final stage of childhood) by prospective lovers. Its ultimate goal is to explore the varying or changing attitudes towards animals, as set in particular social and chronological terms, and as based on one of the fundamental dualities permeating Greek thought (humans vs animals, Greeks vs barbarians etc). These attitudes are bequeathed to the “unchanged” members of society. Religious ceremonies, part of their upbringing and their training into their future social and gender roles. The main sources of evidence are depictions on Greek vases, mainly Athenian of the Classical period, in which daily scenes become very popular, supplemented by figurines of animals used as toys, as well as works of sculpture, such as funerary reliefs, showing children playing or fighting with animals. Animal shaped toys, such as rattles, held by either toddlers or their nurses to lull them to sleep, supplemented by figurines of animals used as toys, as well as works of sculpture, such as funerary reliefs, showing children playing or fighting with animals. Animal shaped toys, such as rattles, held by either toddlers or their nurses to lull them to sleep, supplemented by figurines of animals used as toys, as well as works of sculpture, such as funerary reliefs, showing children playing or fighting with animals, as well as works of sculpture, such as funerary reliefs, showing children playing or fighting with animals. Animal shaped toys, such as rattles, held by either toddlers or their nurses to lull them to sleep, supplemented by figurines of animals used as toys, as well as works of sculpture, such as funerary reliefs, showing children playing or fighting with animals, as well as works of sculpture, such as funerary reliefs, showing children playing or fighting with animals.

TH1-14 Abstract 11
The social construction of childhood through Roman artefacts: finger-rings and their motifs

Author - Dr. Swift, Ellen, University of Kent, Canterbury, United Kingdom (Presenting author)

Keywords: artefacts, Roman, social identity

Presentation Preference - Oral

The Roman life course is a well studied topic, but there have been few considerations of how artefact evidence can contribute to our understanding of childhood in the Roman period. Yet objects made specifically for children have different and conceptualise childhood as a separate category to adulthood, and thereby through social practices involving material culture. This paper takes one object category, finger-rings, and investigates the evidence that relates to the use of rings by children. By examining grave contexts containing finger-rings, we can establish the normal size ranges that existed for rings worn by children and adults. A much larger sample of rings can then be examined, identifying rings in sizes that are likely to have been worn by children, and documenting any decorative motifs on the bezel of the ring that were particularly associated with them. We can show that decorative motifs that were much used for children in the Roman period include the phallicus symbol, palm branch, depictions of the Egyptian god Serapis, and other motifs such as theatre masks. Many of these themes chosen for children’s rings reflect themes of benevolence and protection appropriate to the perceived vulnerability of children in antiquity, while others relate to childhood activities and conceptualise childhood as a time of leisure. A difference can even be identified between motifs felt suitable only for babies, and those given to older children. We can also investigate the likely age at which children may have been given seal rings, and so document the life course stage at which they began to articulate their identity as a literate person. The paper suggests a methodology that could be fruitfully applied in many periods to reveal more about how childhood was conceptualised in the past.

TH1-14 Abstract 12
The children of medieval and post medieval Copenhagen

Author - Jark Jensen, Jane, Museum of Copenhagen, Kopenhagen V, Denmark (Presenting author)

Keywords: burial, child labour, children

Presentation Preference - Oral

Children are often quite invisible in the archaeological material for many reasons - the (few) toys have disappeared or can no longer be identified; children’s bones are more fragile and perish faster than those from adults from burial sites. With the aim to give nuance to the lives of children in past society, this paper will present the evidence of children living in historical Copenhagen through different unique findings of artefacts, a cemetery and an example of child labour. The Metro excavations in the city centre have given a lot of new evidence of the presence of children in Copenhagen. Well preserved finds of toys made of organic materials were excavated from the moats of the fortification surrounding the city. These unique toys reflect play and fun, but also some of them must have been a means of preparing the children for adult lives. Along the same line, some finger rings were found in the cemetery of Christianshavn; this paper will also present the evidence of children’s graves in the cemetery and the Orphanage in Copenhagen.

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TH1-14 Abstract 13
Work and play at the early modern orphanage in Altenburg

Author - Schäfer, Kathrin, University of Bamberg, Bamberg, Germany (Presenting author)

Keywords: History of Childhood, Orphanage, Post-Medieval Archaeology

Presentation Preference - Oral

In contact with my dissertation project at the University of Bamberg I am editing findings from an early modern orphanage. The institution in Altenburg in Thuringia was founded after the 30 Years War like many other houses for this purpose in Germany. The walls of the former church of a monastery were used to establish the orphanage. It was financed by donations of the citizenry but also had to generate money in the textile production. Most of the time the Orphan Father was a qualified stocking maker and the orphans had to work in the production. A work plan from 1710 has been preserved which shows the expected workload per child. Unfortunately only the finds of some spindle whorls mirror the children’s work in the archaeological record. In addition to the manufacture-like work at fixed times of the day the children had to help out with the household chores. The girls assisted the Orphan Mother in the kitchen and other household work, like cleaning and fixing the clothes and the boys would help the Orphan Father with gardening, knife grinding and repairs. When they were around fourteen years old the orphans were forced out of the institution and had to make a life on their own: most of the boys as apprentice of a craftsman and the girls as maids. Nevertheless the everyday life of an orphan not only consisted of work. In the mornings the children attended school and they also found some time for leisure and play: the finds of some toys from the orphanage can prove this.

TH1-14 Abstract 14
Getting better. Learning how to nap
at the Early Neolithic Flint mine of Casa Montero (Spain)

Author - Dr. Castañeda, Nuria, Universitat Paris I-Panthéon Sorbonne, Nanterre, France (Presenting author)

Co-author(s) - Casi-Adrián, Pilar, Instituto de Historia-CSIC, Madrid, Spain

Keywords: Casa Montero, learning, Neolithic mining

Presentation Preference - Oral
Children in Vilnius potteries

Author: Dr. Blaisečius, Povilas, National Museum – Palace of the Grand Dukes of Lithuania, Vilnius, Lithuania (Presenting author)

Keywords: Child labor, Fingerprints, Medieval archaeology

Presentation Preference: Poster

In Medieval times, childhood was much shorter than it is today. Children started helping adults out at the tender age of 5–7, often doing hard physical work. Written sources depict children as auxiliary workers and apprentices in various workshops and manufacturing sites. What about archaeological sources? The aim of this presentation is to analyse what tasks children could have performed in ceramic workshops manufacturing bricks, roof tiles, glazed tiles and other household ceramics. The data base of the analysis consists of ceramic artefacts discovered during archaeological research in Vilnius, Lithuania. Artifacts with fingerprints found in production sites and residential urban environment are analysed with the help of dactiloscopic methods to establish whether these were children’s fingerprints. The interpretation of background information helps identify the nature and scope of children’s work, as well as changes possibly dependent on the child’s age.

Children in Vilnius Graveyards

Author: Dr. Chmiel-Chrzanowska, Marta, University of Szczecin, Szczecin, Poland (Presenting author)

Keywords: Archaeology of Childhood

Presentation Preference: Poster

Children in Vilnius graveyards are a common site for children to be buried. This presentation will explore the different types of graveyards found in Vilnius and the children found within them. The analysis of these burials will provide insight into the social status of children during this time period.

Children in Ancient Athens

Author: Dr. Allegro, Rafał, University of Warsaw, Warsaw, Poland (Presenting author)

Keywords: Children, environmental stress

Presentation Preference: Poster

This presentation will explore the lives and experiences of children in Ancient Athens. The analysis of archaeological and historical sources will provide insight into the social and economic roles of children in this period.

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Interpreting the Archaeological Record

Necromancy in grave reopening practices

cannot be seen as a single phenomenon: it was carried out on a variety of timescales and in different ways. However, a consistent...
Interpreting the Archaeological Record

Co-author(s): Mindaugas Kaupas, University of Tartu, Tartu, Estonia
Keywords: conversion period, eastern Europe, egg symbolism
Presentation Preference - Oral

In 2009 two wealthy female inhumations were excavated in the conversion period (12th–13th century) cemetery at Kukruse, NE-Lithuania. Both women were exceptionally richly furnished and belonged to the nobility of this society. In addition to rich grave goods both inhumations contained egg shells, although these were recovered from clearly different contexts. In one burial the egg was laid between femurs, on top of her dress and ornaments. It was painted red and clearly displayed with apparent symbolic connotations. The egg from the second inhumation was found at the foot of the woman, next to a ceramic vessel. Both eggs have been identified as chicken eggs with ZoMS and microscopic analysis.

The unusually different finding circumstances of eggs in the two female burials at Kukruse raise several questions: What is the meaning of an egg in burial rituals for this conversion period cemetery? Why was the same object curated so differently and how are we to interpret this situation? Can we talk about pagan or Christian connotations, perhaps even simultaneously? What do these eggs tell us about the religious identity of this society?

Sacredness of Space and the Afterlife: The Topography of Medieval Lithuanian Cremation Cemeteries

Author: Petras Kuselis, Vilnius University, Vilnius, Lithuania
Keywords: sacredness, the afterlife, topography of cremation cemeteries
Presentation Preference - Oral

In many cultures burial rites and the relationship with death and the afterlife are fundamental issues of existence. Death is conceived as a passage from this world to the afterlife, therefore, burial is perceived as a direct reflection of connection between the living and the dead. Contrary to the established views, burial rites speak not only about the departed to the Paradise, but also about the living, their ideology and the concept of the afterlife. Nowadays researchers perform comprehensive interdisciplinary studies, and burial rites are used for the reconstruction of the social structure and communication, religion and the concept of the afterlife of past societies.

Furthermore, they allow analysing burial sites and their environment that is of less importance. This paper examines the burial topography and its relationship with the surrounding environment and the landscape. The relationship among cemeteries, residential and sacred places, defensive structures and water bodies is investigated. The paper aims to reveal what role sacredness of burial sites, the concept of the afterlife, and afterlife images played in the topography of burial cemeteries.

The early Medieval Lithuanian cremation cemeteries are the case in this study. In the middle of the 13th century, the Grand Duchy of Lithuania was formed as a Christian state, however, Christianity was abandoned; and until the final conversion to Christianity in 1387, Lithuania existed as the only Medieval pagan state in all Christian Europe. In the 13th and 14th centuries, due to the state reform of Paganism in Lithuania, burying cremated deceased in burial grounds became a uniform burial practice. But, we see in certain Median burial places, though the topography of early Medieval Lithuanian cemeteries is not uniform, the burial features are similar. The cremated deceased were buried in places above the flat land, that were separated by water from the living spaces. It is argued that separation of spaces of the living and the dead, revealed in the topography of cremation cemeteries, was based on mythical images of the afterlife, and special sacred and mythological values conditioned the location of burial sites.

Change of the Lithuanian burial rite in the 14th – 16th century: Archaeological and Written data

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Co-author(s): Nebelis, Ričardas, Vilnius University, Vilnius, Lithuania
Keywords: burial, cemeteries, medieval archeology
Presentation Preference - Oral

Lithuania was the last European country converted to Christianity. In its ethnic lands the old heathen faith thrived till the end of the 14th century (and in Samogitia till the early 15th century). Though Christianity featured some signs of spreading to Lithuania since the occurrence of the Lithuanian state (the 1st half of the 13th century), conversions were far from massive. Christian communities (both Eastern Orthodox and Catholic) and their churches and cemeteries existed in Vilnius during the heathen times. After Lithuania was baptised in 1387 and Samogitia – in 1413, Christianity began to spread causing changes in different spheres of life including burial rites. In the late 14th – early 15th century inhabitants of the present territory of Lithuania practiced inhumation but cremation continued till the 2nd quarter of the 15th century alongside with that. In case of inhumation, the dead were buried both in coffins and without them. Their orientation varied but the tradition of orientating heads westwards started to prevail. This is especially obvious in the burial sites located in the areas where the process of Christianisation was more advanced; burial goods in such graves also tend to be fewer. Nevertheless, most of the burials dating to the late 14th – early 16th century still contain burial goods. In most of the cemeteries surveyed burial goods were present in more than a half of the graves; their numbers varied from one to several dozen of items. Knives were the most popular; they were found in the burials of males, females, and children. Female burials distinguished with the numbers of jewellery items, whereas in the male burials only rings were a common jewellery piece. Besides that, female burials often contained spindlewhorls and awls, whereas male burials included weapons (and sometimes also spurs and stirrups), flint strikers, razors, and belt buckles. Other burial items, such as pouches, purses, coins, chain links, pots, poultry bones, and amulets (laws of wild beasts in metal sockets), were found in burials of both genders.
Though, after Lithuania had been baptised, Christianity began to spread and change burial rites, its influence varied in different ethnic regions of Lithuania. It had a greater effect in the political centres of the state, in the cities, and in the vicinities of castles and churches. Meanwhile, in the periphery old burial customs which were hardly in line with Christianity thrived during the entire period discussed. The faith featured syncretism and entanglement of Christian and ancient heathen traditions which was reflected by the burial rites, as well.

The written sources of the period discussed also present some information on the old burial customs still being practiced in the region revealing how complicated was the way of Christianity into the heathen country.

The multicultural cemetery in Ułow (site 3, Poland) – the magic of the place or the random choice?

Author - Dr. Niesiobdzska-Winiarczyk, Barbara, Institute of Archaeology, Maria Curie-Skłodowska University in Lublin, Lublin, Poland
Co-author(s) - Wiśniewski, Tadeusz, Institute of Archaeology, Maria Curie-Skłodowska University in Lublin, Lublin, Poland (Presenting author)
Keywords: burial rites, multicultural cemetery, Ułow, SE Poland
Presentation Preference - Oral

Ułow is a small village in Lublin Voivodeship (SE Poland) situated in the region of Middle Roztocze. The complex of archaeological sites in the woods of the vicinity of Ułow was found by searchers with metal detectors who were looking for military items from the World War II. Among sites recognized during the archaeological excavations, there are two cemeteries dated to the late Roman Period and the Migration Period (sites 3 and 7) and two contemporary settlements (tents 1 and 10), separated from each other by a deep valley of rivulet, now intermittent. At the same time, it is a border between two zones – sacrum and profanum. On site 3, except the cemetery dated to the 4th century A.D. – to the middle of the 5th century A.D. evidences of much older settlement were found. They are associated with the Late Palaeolithic, the Mesolithic, the Neolithic (the Lublin-Volhynia, Tunnel Beaker and Corded Ware Cultures), as well as the Bronze Age, the early Iron Age (the Trzciniec and Lusatian Cultures) and the Middle Ages. Three barrows of the Corded Ware Culture were also discovered and explored. They were closely connected with the arrangement of a cemetery from the Late Roman and early Migration Periods. Many aspects of the burial rites practiced at Ułow in all phases of the settlement is not an analogy in Polish lands. Therefore, the main question is why the people of so many cultures chose this place. Whether the settlement was associated with convenient geographical and geomorphologic conditions or with cultural tradition, or whether it was the random choice.

The area of the ritual activities.
Case studies of the cemetery in Paprotna Kolonia (NE Poland)

Author - Dr. hab. Karczewski, Maciej, Institute of History and Political Sciences, Białystok, Poland (Presenting author)
Co-author(s) - Karczewski, Malgorzata, The Research Centre of Central and Eastern Europe, Białystok, Poland
Keywords: cremation cemetery, rituals, Roman and early Migration Periods
Presentation Preference - Oral

The cemetery of the Bogaczewo Culture from the Roman and early Migration Periods in Paproitna Kolonia village, in the Masurian Lakeland, delivered several traces related not only to the cult of the deceased but also to another ritual activities which took place on the area of the cemetery. Multidisciplinary research conducted so far, revealed traces of the use of plants in the burial ritual, the social structure reflected by the stratigraphy of graves, a close relationship between the location of the cemetery and environmental conditions and the use of the area of the cemetery as a place of sacrifices of horses. All these discoveries are changing and expanding existing knowledge of flat cremation cemeteries of Bogaczewo Culture, related to the Gaiński tribe mentioned by Claudia Piotrem.

Breclov-Pohansko – the cemetery around the rotunda as a place for a cult of the dead

Author - PhD Pichyholstová, Renata, Masaryk university, Brno, Czech Republic (Presenting author)
Keywords: Breclov-Pohansko, collapsing time, early medieval
Presentation Preference - Oral

The early medieval stronghold Breclov-Pohansko (southern Moravia, Czech republic) was important residential agglomeration of so-called Great Moravian Empire. In its north-eastern suburb Christian church with graveyard around was discovered. From years 2008 to 2012 there were found 150 graves. The various attributes of funeral features were explored there, for example the graves with presence or absence of funeral furnishing, with or without of wooden coffin; of interior stone construction and adjustment of grave pits, the diversity in the cubage of grave pits or in the orientation of the deceased. The cemetery is dated to the 9th and 10th centuries. It is a time of the turbulent changes. The so-called Great Moravia was destroyed, the Christian clergy, castles and churches. Meanwhile, in the periphery old burial customs which were hardly in line with Christianity thrived during the entire period discussed. The faith featured syncretism and entanglement of Christian and ancient heathen traditions which was reflected by the burial rites, as well.

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The multicultural cemetery in Ułow (site 3, Poland) – the magic of the place or the random choice?

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Keywords: cremation cemetery, rituals, Roman and early Migration Periods
Presentation Preference - Oral

The cemetery of the Bogaczewo Culture from the Roman and early Migration Periods in Paproitna Kolonia village, in the Masurian Lakeland, delivered several traces related not only to the cult of the deceased but also to another ritual activities which took place on the area of the cemetery. Multidisciplinary research conducted so far, revealed traces of the use of plants in the burial ritual, the social structure reflected by the stratigraphy of graves, a close relationship between the location of the cemetery and environmental conditions and the use of the area of the cemetery as a place of sacrifices of horses. All these discoveries are changing and expanding existing knowledge of flat cremation cemeteries of Bogaczewo Culture, related to the Gaiński tribe mentioned by Claudia Piotrem.

Breclov-Pohansko – the cemetery around the rotunda as a place for a cult of the dead

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Keywords: Breclov-Pohansko, collapsing time, early medieval
Presentation Preference - Oral

The early medieval stronghold Breclov-Pohansko (southern Moravia, Czech republic) was important residential agglomeration of so-called Great Moravian Empire. In its north-eastern suburb Christian church with graveyard around was discovered. From years 2008 to 2012 there were found 150 graves. The various attributes of funeral features were explored there, for example the graves with presence or absence of funeral furnishing, with or without of wooden coffin; of interior stone construction and adjustment of grave pits, the diversity in the cubage of grave pits or in the orientation of the deceased. The cemetery is dated to the 9th and 10th centuries. It is a time of the turbulent changes. The so-called Great Moravia was destroyed, the Christian clergy, castles and churches. Meanwhile, in the periphery old burial customs which were hardly in line with Christianity thrived during the entire period discussed. The faith featured syncretism and entanglement of Christian and ancient heathen traditions which was reflected by the burial rites, as well.

The written sources of the period discussed also present some information on the old burial customs still being practiced in the region revealing how complicated was the way of Christianity into the heathen country.
What can the cemeteries from 8th – 10th centuries from Lower Danube region tell us?

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Keywords: cemeteries as social understanding, early middle age, faith in funerary context

Presentation Preference - Oral

In the region of Lower Danube, in the last centuries of the 1st Millennium, a great number of cemeteries were discovered. This is an epoch when Christianity and paganism among barbarians are still fighting for supremacy, generally speaking: in particular a discussion of fighting of different kinds of Christianity with different kinds of paganism. If not even a christian vs. christian.

We have a lot of information of this kind of social manifestation of groups, about the cemeteries. Did those information help us to understand those fighting? To understand the religion of the different groups the lived on the Lower Danube? Did the differences between the way a grave was construct with all its architecture and goods can be viewed as arguments for seeing religious differences between groups or persons? Did the cremation and inhumation are antagonist or not?

Overall, we think we have arguments for a discussion not only about what is christian or what is pagan, but for a dipter one, concerning the main the person and not the group, taking into consideration small, but we think important, differences in the funerary expression of faith of each grave/person.

In this World and the Next: Deviant Burial Rites from Medieval Cemeteries in Bulgaria

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Keywords: Bulgaria, deviant burials, medieval period

Presentation Preference - Oral

What is deviant burial and why it occurs are questions that have been part of archaeological thinking longer than we may assume. Next time we discuss the interest of such special cases where the deceased received noticeable differential treatment is just now forming systematic approach towards them. Recently the theme of deviant burials was reappropriated in European archaeology, sometimes creating very heated debate over it. Simultaneously, the increasing finds number of such untypical and strange character attracted significant interest from the media and the wider public on the matter, often turning the topic into academic grey area.

The present work is the first consistent archaeological study of this phenomenon on the territory of Bulgaria based on the archaeological findings and records and adopting long-term and theoretically aware perspective. It is based on pilot study undertaken to assess the potential for wider research on regional scale in Southeastern Europe.

The paper will present the general conclusions at the current stage of the research and will illustrate the applied methodology and interpretations with certain case studies. The function of deviant burials in the increasingly complex legal culture of the medieval Bulgarian states and the impact of Christianity and the Church over it will be discussed. The close entanglement between sacred meaning and social evaluation of certain individuals can also be seen as a strategy to create and recreate social identities and memory within cemeteries and landscapes.

Aegean burials as liminal performances

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Keywords: Aegean, burial, Performance

Presentation Preference - Oral

Death is one of the moments of transition in life. For the living it is important to effect this event through ritual activities and both pre-ritual concern with the separation from the existing world and post-ritual the reincorporation into the new world - are performed.

When the Late Bronze Age Aegeans experienced death, they performed specific and appropriate rites and ceremonies in order to connect with the transcendental world and bridge the gulf between this world and the other beyond. This world and the other world were separated by a liminal zone, which partake of the qualities of both and this is where the focus of ritual activity takes place. Special requirements of purity may exist here and a heightened awareness is appropriate, since there is risk of pollution where transition between life and death takes place. The liminal zone is a special and mysterious region, which carries the risks of hidden dangers. The ritual actions of propitiation directed towards the supernatural powers consist of food and blood sacrifice, libations, gifts of non-consumable material objects, prayer and the payment of respect. The present paper brings forward the ritual activities performed at selected Aegean Late Bronze Age cemeteries through the reflection of the material remains and the analysis of the structural components of the tomb.

Phenomenon of multiple burials and its significance in the studies of Early Mycenaean elites

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Keywords: identity, Mycenaean elites, multiple burials

Presentation Preference - Oral

The presentation will provide a summary of the mortuary customs studies for MH I – LH II Argolis. Multiple graves were only 14% of total excavated number from the sites of Asine, Argos, Dendra, Lerna, Mycenae, Tiryns and Pylos. The analysis focused on the natural focus of specified graves. Following preferences were provided with the MH III period (beginning of Mycenaean culture). The high growth of multiple burials was visible, the traditional burial areas were used and there were no special cemeteries for the local elites of society. Some of the objects were highlighted within the cemeteries (perimeter walls, stone steles and tumuli). Using of tumuli (Argos) and perimeter walls (Grave Circles at Mycenae) distinguished them also in the local landscapes. Using of the elaborated tomb structures (cist and shaft graves) and deposition of more sophisticated grave offerings was noticeable. It is also clear that for some multiple burials bigger graves were used, specifically created for this practice.

The main topic of paper will be an interpretation of multiple burials phenomenon in cases of tradition and communal identity. It is visible that Early Mycenaean elites were focused on cultivating tradition, but with special individualization of their own group. It should be emphasized that there was a strong need to practice certain funeral customs – using a common cemetery, the same type of tombs and set of offerings. The posed questions will be about the purpose of adding successive deceased to the same grave to interpret acts of proving or highlighting the relationships between successive deceased and between deceased and living. It is visible that the elites tried to differentiate between each other by using of special tomb markers (walls, stone steles and tumuli) or graves offerings, which included numerous precious objects (imported or made in local workshops). This explanations will be connected especially to the presentation of cases from Argos (tumuli) and Mycenae (grave circles).

The Argolis cemeteries can be interpreted as a theatre of cultural changes. They indicate a desire to accent a strong significance of the blood ties role into a community and the role of the family as the basic social unit. They also indicate a manner to separate and designate for some groups of society the presentation of cases that are in differentiation of themselves. They emphasized the individual identity and tried to define their origins and place as members of a larger group of society.

The special roles in this performance were reserved for ancestors and descendants, who created a special conditions to highlighted relationships between them.

The Symbolic Meaning of Grave Goods

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Keywords: Grave goods, Interdisciplinary method, Symbolic meaning

Presentation Preference - Oral

Generally, grave goods are defined as artefacts buried with a deceased that are or will be required in the afterlife. Archaeologists collect the following information about grave goods: the material from which they are made, their measurements and typology, and often detailed descriptions of the decoration of ornaments. Usually the functions and purposes of these artefacts are described in terms of their practical meanings, rather than their symbolic meaning. For example, needles in the grave are approached like sewing tools, that will be used for the same purpose in the afterlife.

Grave goods are valuable to determine and identify important data: dates and periods of graves and cemeteries, cultural migrations within a certain geographical area, the culture itself or even relevant changes of technologies. Often grave goods are broken down into different groups: by purpose e.g., as tools or ornaments, by whether they were belongings of the deceased or grave gifts, or by location of production i.e., whether they were locally produced or imported. In all these calculations and analyses, grave goods are treated like objects without particularly deep meanings.

Also it seems to have been forgotten that funerals are a complex of symbolic actions, which archaeologists can perceive through material remains. To understand symbolic meaning of grave goods we can use interdisciplinary method. This gives a chance to see diverse view of artefacts. The main aim of this paper is to reveal the symbolic meaning of grave goods, using archaeology, ethnology, history and Lithuanian linguistics. To illustrate, five different artefacts have been chosen: needles, rings, sledge bolts, axes and swords.
TH1-16 Abstract 01

Obsidian Use on Islands Big and Small: Sicily and others in the Central Mediterranean

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Keywords: exchange, obsidian, sourcing
Presentation Preference - Oral

Starting in the Early Neolithic (ca. 6000 BC) obsidian from four island sources was acquired and distributed over great distances in the Central Mediterranean. In recent years, non-destructive analytical instruments, including portable X-ray fluorescence spectrometers (pXRF), have been used to determine the specific geological sources of thousands of obsidian artefacts from many sites throughout this region. Obsidian from the Aeolian island of Lipari was widely used in Sicily, Malta, peninsular Italy, and southern France. From Lipari, obsidian made its way to southern Italy. Prior studies of the obsidian sources show multiple supply routes, based on least cost analysis algorithms for return trips. This enabled us to test various models of routes between sites and sources, including direct or indirect access, with or without an obsidian controlling either access or distribution. To conclude, the preliminary results are compared with evidence elsewhere of Michelsberg lithic procurement territories.

TH1-16 Abstract 02

Provenancing Archaeological Obsidian from Bulgaria

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Keywords: Bulgaria, obsidian, provenancing
Presentation Preference - Oral

Use of obsidian is documented in a small number of Neolithic and Chalcolithic sites in Bulgaria. With no known geological sources in the eastern Balkans, the obsidian must have been obtained from areas further afield. Establishing the provenance of archaeological obsidian can provide insights into social and economic contacts among regions and groups and the nature of these contacts. We report the first results of non-destructive XRF analyses of obsidian artefacts from Bulgarian prehistoric sites and comparisons with geological sources in Anatolia, the Aegean, the central Mediterranean and Carpathians. Our findings have an important bearing on lithic raw material exchange systems in the Balkans from the Early Neolithic onwards.

TH1-16 Abstract 03

Sites, Sources and Flint Routes

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Keywords: Barian ref, sources, procurement, control, Neolithic, Michelsberg, routes, access
Presentation Preference - Oral

During the Middle Neolithic in the Asine and Velese valleys, the numerous sites dating to the Míchelsberg Culture mostly exploit Upper Bartonian Tertiary flint (nătă). This was usually produced for producing flakes, although flint axes were also made. Other tertiaries were also used for various types of secondary flint, and in recent years, the use of obsidian from Anatolian sources has been analyzed in a number of Neolithic and Chalcolithic sites. The aim here was to address a number of issues. Is there a factor of Bartonian flint closer than Rumney flint with sufficient large and quality nodules for production of long blades? Are there any similar processes in the use of other raw materials in different regions? Are the earliest instances of Carpathian obsidian involved in controlling access to obsidian sources? These are among the questions we aim to answer in this paper, using the results obtained, we tested various models of routes between sites and sources, based on least cost analysis to determine which routes were most likely to be used in the Palaeolithic and Mesolithic. This enabled us to identify the possible routes used, and also to calculate more precise distances involved. Different hypotheses were tested, including direct or indirect access, with or without an obsidian controlling either access or distribution. To conclude, the preliminary results are compared with evidence elsewhere of Michelsberg lithic procurement territories.
quartz, quartzite, sandstone. One of such non-flint raw processing cases are set out in the study of the Early Mesolithic Pasieinaí-1 site in eastern Lithuania, where knapped porphyry, quartzite and sandstone material amounted to 15 percent of the total debris from the site. These raw materials were reduced in manner of flint knapping (spiral core + soft direct percussion and tiles and flake tools). At the end of the Mesolithic, the situation changed dramatically and local fisher-hunter communities of north-eastern Lithuania made their contacts with people from the Valdai / Upper Volga Region and got access to sources of high-quality redsandstone. A few hundred years later, together with flint bands of a new kind,itates of the debitage, consists of such kind of flint. The imported grey flint from south Lithuania was also used but in much less quantity than in earlier times. The lack of high-quality flint raw material is quite visible in the majority of the late Mesolithic-early Neolithic settlements assemblages from north-east and north Lithuanian, due of sizes of cores, tools and debris which are 3-10 times smaller than usual. Other kinds of rocks used widely for the production of special tools (axes, chisels, grinding stones, etc.), too. Daugava-Dyina river corridor was widely used at the turn of the Neolithic-Bronze Age, when the yellow flint was imported from the Valdai / Upper Volga region.

Keywords: Lithic procurement practices, quarry research, social phenomenon

Presentation Preference: Oral

TH1-16 Abstract 07
Lithic procurement as a social phenomenon
in the Stone and Bronze Age in southern Norway

Author: Astrid, Nyland, Oslo, Norway (Presenting author)

Keywords: Lithic procurement practices, quarry research, social phenomenon

Presentation Preference: Oral

Quarrying and other types of direct lithic raw material procurement can be perceived as a total social phenomenon. Based on analyses of 21 extraction sites, we have undertaken a chronology of the practices involved in direct lithic procurement in the Stone, Bronze and Early Iron Ages in southern Norway. My method is one of contextualization and comparison of material found at quarries and related workshops and settlement sites, of the total scale and duration of quarrying, and, to some degree, the rock’s distribution. This, I demonstrate and interpret spatial and temporal variation in procurement practices. This is, some practices involved in lithic procurement were common cross-regionally, while others defined regions and/or time periods. In some situations, it seems to have matters more how, from whom or where, you obtained your rock, than the type or the quality of the rock itself. Suggesting also an index of the intensity of quarrying, the different modes of lithic procurement demonstrate the variations of the role the various lithic extraction sites must have played in the prehistoric societies. Some extraction sites even became nodal points in the landscape, entangled in social and symbolic structures. Thus, when contextualised, quarry studies have the potential to provide insight into developing social relations and social-political strategies.

TH1-16 Abstract 08
Double cache – single core: a case of long distance (85 km) stone tool refits from southern Norway

Author: Nielsen, Sven, Museum of Cultural History, University of Oslo, Oslo, Norway (Presenting author)

Keywords: Long-blades, Middle Neolithic, Norway

Presentation Preference: Oral

Along the coastal strip of southernmost Norway, a large number of lithic artefacts associated with the Corded Ware Culture (i.e. the Single Grave Culture and the Swedish-Norwegian Battle Axe Culture) have been collected by amateur archaeologists during the last century. However, the scientific data (e.g. archaeological and palaeobotanical) from the period (2800–2350 cal BC) all indicate a continuation of a foraging lifestyle in the very same region. For some time, this picture has represented a paradox in Norwegian Neolithic research. How are we to interpret the occurrence of these foreign objects? In order to shed light on this question, two assemblages of long-blades, representing all long-blade deposits in Norway, were subject to technological analysis. Through the blade assemblages were initially found 85 km apart (straight line distance), both technological and refining analyses provided positive evidence that all blades had been reduced from the same core, and thus probably by a single craftsman. These findings are discussed in terms of long distance trade and observed behavioural differences between southern Scandinavian farming communities and the foraging culture of southernmost Norway.

TH1-16 Abstract 09
Production, distribution and use of Final Neolithic flint axes in western Poland

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Keywords: Flint axes, Poland, Final Neolithic

Presentation Preference: Oral

The paper presents selected issues related to the manufacture, distribution and function of the Final Neolithic flint axes in western Poland. The main subject of our study is flint axes associated with the Funnel Beaker Culture. Flint axes were the most important axes associated with the Funnel Beaker Culture. For the research presented in this paper, we combined raw material analysis with morphometric, morphologic, microwear and experimental methods. We carried out studies on the types of raw materials from which the flint axes were made. The data obtained were compared to the sources from local outcrops, and two important centres of axe production associated with the hammers from southern Poland and “Scandinavian flint”. Based on these results, we created models of axe production relating to the production and use of the flint axes made from different types of raw material. Additionally, we investigated the character of the distribution routes - whether craftsmen manufactured the flint axes only near to the prehistoric flint mines and their goods were imported to the other territories, or they journeyed as specialists who distributed and repaired the flint axes.
TH1-16 Abstract 10
Banded flint from Central Poland – new discoveries, new questions
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Keywords: banded flint, flint mining, remote sensing
Presentation Preference: Oral

Prehistoric banded flint mines were discovered on the northeast margin of the Świętokrzyskie Mountains nearly a hundred years ago. Since then, they have been attracting the attention of several generations of Polish archaeologists. A special place in these studies was taken by a large and well-preserved mining field “Krzemionki”. Intensive research on prehistoric banded flint exploited during the last quarter of the twentieth century was summarized during the VIIth International Flint Symposium. In recent years, one has returned to the research of flint mining using new technical possibilities. Geological survey showed the location of many kilometres of outcrops of banded flint in the southeast margin of the Świętokrzyskie Mountains. However, there is no evidence of its use in prehistoric times. Survey also located sporadic occurrences of secondary accumulations of banded flint in glacial deposits in southern Poland (near Cracow). Airborne Laser Scanning (ALS) make it possible to analyze in great detail the entire course of banded flint outcrops from the NE margin of the Świętokrzyskie Mountains. This resulted in the discovery of yet another prehistoric point of exploitation. Also allowed to create detailed maps of all known prehistoric mining sites. These plans revealed a previously unknown method of exploitation and also changed our ideas and state of preservation of most sites. Verification surface survey of prehistoric banded flint mines resulted in the discovery of materials that show in new light the problem to access of resources and how they were used in the final Neolithic and Bronze Age.

TH1-16 Abstract 11
Still in Prehistoric Times? The mined flint for production of high quality tools in Dynastic Egypt
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Keywords: Dynastic Period, Egypt, flint
Presentation Preference: Oral

Flint as a material for the production of implements in Egypt was still common during the Bronze Age. It was caused mostly by the difficult access to copper and tin deposits and especially the costs of the production of metal tools. In contrast, sources of flint were easily accessible for everybody. Additionally, products of this raw material had a long durability and a low cost. Flint appeared almost throughout Egypt, but mined flint of better quality, was placed mostly in wadis, such as in Wadi el-Shahsh, Wadi Gubara, Wadi el-Halaq, and in Western Thebes. These places attracted the attention of researchers since the end of the 19th century. However, none of them has been comprehensively examined. Only recently research has been resumed. In the area of the wadis there are still places of extraction of raw material, lasting its quality, knapping workshops and some temporary workers' shelters visible at the surface. On the other hand, there are not many traces of knapping workshops on the settlement area in the Dynastic Period. However, a wide spectrum of everyday objects made of flint is known from the territory of Egypt. This paper is concerned with the study of flint assemblages from a number of Egyptian archaeological sites of the Dynastic Period. The observations are based on published material from mines and settlements, on museum collections and excavations. The attempt to compare the mined flint and flint from secondary placer deposits products will be carried out. The results of the analysis will provide an introduction to the topic of flint knapping specialization and indicate the importance of this raw material in Dynastic Egypt.

TH1-16 Abstract 12
Obsidian blades debitage at Kašov–Čepiceg I (Bůkův Culture), Slovakia
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Co-author - Homolová, Bohumil, Institute of Archaeology, Slovak Academy of Sciences, Nitra, Slovakia
Keywords: Early Neolithic, lithic technology, obsidian
Presentation Preference: Poster

This paper will present the result of a new study of the site of Kašov–Čepiceg I in eastern Slovakia. Excavations at Kašov were led by the Czech School and Slovakia in the 1980s. Excavations revealed one pit with hundreds of obsidian waste concentrations and associated decorated pottery sherds belonging to the Bůkův Culture (Bňaseň 1991). The exploitation and trade of obsidian is usually linked to the Bůkův Culture. Previous analyses of chipped stone industries from various sites have shown that obsidian played a major role especially with the existence of so-called specialized on-site workshops where blocks were preliminarily worked and partially exploited to produce blades. The detailed technological study of the concentrations shows that the local operators of obsidian knapping at Kašov is quite an original Neolithic obsidian debitage (see Duller 2003). The production is not very regular and shows a macro blade debitage as well as smaller blades. Evidence of flint-knapping apprenticeship has also been detected. Finally, we demonstrate that Kašov can rather be interpreted as a domestic assemblage. The obsidian production does not suffer much from other blade productions made in limnoquartzite or radiolarite described on other Bůků sites. We believe that the blade debitage of the pit at Kašov belongs to a laminar tradition that appeared in the Early Phase of the ELC in eastern Slovakia.

TH1-16 Abstract 13
In search of a non-destructive way of identifying lidite in archaeological lithic assemblages
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Keywords: Lake Onega, Mesolithic, Fennoscandia, Russia, lidite, chert, lithic provenance analysis
Presentation Preference: Poster

Lidite is a low grade metamorphosed siliceous sedimentary rock consisting of quartz and approximately 5% noncrystalline shungite carbon. The rock has a conchoidal fracture but often contains internal fissures while the noncrystalline carbon gives it a pitch black colour. In Northeast Europe deposits of this raw rock type can be found only on the north-western shores of Lake Onega in Russia among other shungite-bearing rocks. The Onega beddocks from bedrock and glacial-drift-derived pebbles, were used for stone tool raw material since the initial postglacial habitation of southern Karelia in the Mesolithic. Outside present-day Russian Karelia artefacts made of lidite are rare but no systematic study of their distribution outside the core area has been conducted so far. However, several artefacts made of a raw material that we suggest to be lidite were recently detected among the finds from Jokivarsi 1, the earliest Mesolithic site in Finland and some 250 kilometres from the western shore of Lake Onega. In support of our working hypothesis of the source of the Jokivarsi 1 artefacts we used a radiocarbon dating which indicates contemporaneous Late Preboreal human presence on the northern shores of the Onega Lake. In order to identify the raw material of the Jokivarsi 1 artefacts, a multidisciplinary research project was designed with two aims: 1) to identify the raw material of the Jokivarsi 1 artefacts with a variety of radiometric and petrological laboratory methods, and 2) to develop a non-destructive method for identifying lidite in archaeological assemblages. The study was conducted and the paper prepared with support from the North Karelia Fund of the Finnish Cultural Foundation and the Russian Scientific Fund (grant 14-17-00786).

TH1-16 Abstract 14
A Danubian raw material exchange network: a case study from Chelmo Land (Poland)
Author - Wiara, Dagmara H., Institute of Archaeology and Ethnology Polish Academy of Science, Warsaw, Poland (Presenting author);
Keywords: Danubian communities, distribution of siliceous rock, East-Central Europe
Presentation Preference: Poster

The Polish Lowland is poor in deposits of good quality raw materials for the manufacture of chipped stone artefacts. Linvanbarlinderamk communities, in Chelmo Land, distributed good quality siliceous rock. Some of them were distributed over dozens of kilometres. On the sites “imported” flints were predominant. Among the most important are the “chocolate” flint from the northeast margin of the Świętokrzyskie (Holy Cross) Mountains, and Jurassic-Cracow flint from the Polish Jura, near Krakow. From 14 inventories from Chelmo Land were analysed more than 1400 flint artefacts. The presence of distributed materials is from 3.5% to 85%. In the oldest phase Jurassic-Cracow flint predominates, while in the younger stages “chocolate” flint is dominant. The latter is present in several varieties, which indicates that it may have been imported from different outcrops. This suggests that the links with the south were not limited to one area. The presence or absence of these two types of flint has an influence on our knowledge about the meaning of the sources, the use and existence of flint mining and the reconstruction of exchange routes. Unfortunately, mistakes are sometimes made when distinguishing the various flints. In particular “chocolate” flint is mistaken for Jurassic-Cracow flint. To better distinguish those two types of flint we made several analyses. One method we used was Electron Probe Micro Analysis (EPMA). We analyzed several geological samples as well as artefacts from four prehistoric sites from Chelmo Land. In this paper we present the results of the analyses and their potential implications for our knowledge of Linvanbarlinderamk communities’ exchange and distribution of siliceous rock. Acknowledgements: The investigations were funded by the National Science Centre in Poland [PRELUDIUM 2; UMO-2011/03/B/HS5/03979].
This study is an analysis of local flint pebble reduction strategies in the settlement of Sārnate. The site is located approximately 2.5 km from the present Baltic Sea shore on a former lakeshore on the Kurzeme Peninsula (western Latvia) and is dated to the Neolithic of the East Baltic. It was excavated between 1938 and 1959 by Eduards Šturms and Lūcija Vankina. During excavations in the site were discovered many separate dwellings. Therefore, in this site it is possible to analyze knapping strategies and techniques that were used in each dwelling and determine similarities and differences between them. According to the data from proximal debitage analysis it is possible to divide dwellings into two major groups on the basis of the way flakes were produced from local flint pebbles. The first group consists of dwellings where flakes were produced from local flint pebbles. The same pebble reduction strategy was used for poorest quality imported flint as well. While good and excellent quality imported flint pebbles and nodules were transformed to platform cores or used as irregular multidirectional cores. In some cases, in this dwelling group local flint pebbles have been divided into massive debitage using bipolar technology as well. The secondary dwelling group consists of dwellings where the quality of a flint pebble did not affect the reduction strategy. In these dwellings both poor quality local flint pebbles and all kind of imported flint pebbles were transformed and used as platform cores and irregular multidirectional cores. In these dwellings flakes from local flint are more like flakes from imported flint - thinner and mostly with a flat striking platform. If the results of this study are compared with the study of pottery in the Sārnate settlement by Valdis Bērziņš, then the first group dwellings where raw material quality affected the pebble reduction strategy are mostly those where were used local pottery tradition: dwellings with Early Sārnate Ware and dwellings with Late Sārnate Ware, while in dwellings where raw material quality did not affect pebble reduction strategy Typical Comb Ware pottery was mostly used.

TH1-16 Abstract 16
Localisation of Sources of Obsidian Registered in Bohemian Prehistory (Czech Republic)
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Keywords: Czech Republic, Neolithic, obsidian
Presentation Preference - Poster
The poster summarises the results of the first geochemical analyses of prehistoric obsidian artefacts from Bohemia (Czech Republic, Central Europe). The analyses focused on eleven samples with reliable find contexts. The majority of the samples come from the Neolithic period (Linear Pottery Culture: LBR: 5500–5000 cal. BC; Břeclav Pottery Culture: STK: 5000–4500/4400 cal. BC). Based on the data obtained, it is possible to locate the raw material of nine samples to the Slovakian source called Carpathian 1b (Brevov – Čajkov). However, the raw material of the two remaining samples dated to the same period comes from Hungarian sources, Carpathian 2b (Érd borony – Olásladány). It is therefore evident that in the Neolithic period, obsidian from the Carpathian sources was used in Bohemia. Both sources are more than 500 km away from the site studied, which suggests that direct access to the sources is highly unlikely. There are two possible explanations. Either, the obsidian raw material was transported to the Bohemian territory with the primary aim of gaining the raw material as such (good quality, black cortex, disregarding its source. Thus, the final evidence of the two sources in the site is the result of a pure coincidence. The other explanation is based on the possibility that different societies (settlements) had different demands or exchange strategies.
There are eight multicultural sites known near Ziljovic village (Hronica district). Open-air settlements dating from the Final Palaeolithic until the late Middle Ages are located on the upper and lower terraces of the left bank of the Neman river. Five of them were excavated between 1999 and 2011. The first inventories from sites 3 and 4 comprised mainly debitage products, which makes it difficult to determine their cultural attribution. Materials from sites 1, 2 and 5 are more characteristic and allow the flint industry to be ascribed to the Neolithic and Bronze Age. Local Cretecent flint was used as a raw material. The tool set of the complexes under discussion is typical for the Neolithic and Bronze Age of the Upper Neman region: triangular arrowheads, end-scrapers, borers, knives and knife-like blades, combination tools, burins, splintered pieces, notched tools, axes and adzes. More than 50% of the flint artefacts are waste products: flakes, blades and technical chips. Typological and comparative analyses permit cultural and chronological interpretation of the material as well as highlighting the main features of the local flint industry of the Neolithic and Bronze Age. Therefore, flint materials testify to the presence of the population of the following cultural traditions on the settlements under discussion: Pirystai-Neman and Neman cultures, the Circle of the Corded Ware Culture, and the Trzoniczge Culture.

THI-16 Abstract 20
Application of morphometric methods for the lithic analysis based on 2D and 3D visualizations
Author - Zarina, Liga, University of Latvia, Riga, Latvia (Presenting author)
Co-author - Kamiris, Marcis, University of Latvia, Riga, Latvia
Co-author - Begins, Valdis, University of Latvia, Riga, Latvia
Keywords: 2D and 3D visualizations, morphometric methods, stone tools
Presentation Preference - Poster

Traditionally, tools are regarded as indicative for characterization of ancient cultures and many of the prehistoric cultures have been distinguished mainly based on the characteristic shapes of tools and applied processing technologies. The relatively high level of preservation of stone artefacts determines their special value in prehistoric studies, especially regarding the most ancient periods. Studies to date confirm the importance of morphology analysis not only for typology and classification, but also for tracing similarities, differences and transitions of shape characteristics comparing archaeological evidences in temporal and spatial context. Moreover, morphology analysis of artefacts reflects also ancient men knowledge, skills and cognition. Morphology analysis quantitatively can be carried out using morphometric methods. Traditional morphometric methods used in archaeology mainly correspond to linear measurements, however, such data do not characterize shape, but refer just to some shape features (e.g. size, certain proportions), thus, such data are not complete. Important contribution to improvement of morphometric methods has been developed by development of various geometric morphometric methods. These methods are not widely used in archaeology, and studies carried out so far mainly have demonstrated the benefits of certain applications that have been borrowed from other research fields where such methods have been adapted. In this respect, the number of studies conducted do not allow to evaluate the suitability of applied methods and point to fact that still there has not been developed enough methodology that would allow to characterize distinguished tools or tool types, mostly in narrow regional context often applied in case studies, but would be also used as a method for obtaining data for wider comparisons and determination of standard characteristics of artefact shapes. The mentioned indicates that it is necessary to develop a comprehensive methodology of artefact documentation and one of topical approaches is 3D visualization. Morphology analysis is based on precise and uniform documentation of artefacts and one of topical approaches is 3D visualization. Accordingly, in the study were conducted experiments in which the 3D models of pebbles and lithic artefacts were created using Aicon Breuckmann smartSCAN 3D scanner and software OPTOCAT. As well the objects were visualised in 3D by visualization. Consequently, in the study were conducted experiments in which the 3D models of pebbles and lithic artefacts were created using Aicon Breuckmann smartSCAN 3D scanner and software OPTOCAT. As well the objects were visualised in 3D by visualization. In this paper, in seeking to discern aspects of the relationships between these intertwined societies of the central middle ages. Overall the paper will demonstrate that the utilization of spatial analysis can be used not only to deepen an understanding of society and their buildings, such as those in Calvados in a period of cultural exchange, domination, and altering views of authority, but also that the use of this method can further illuminate aspects of space and society by using a different lens to view the Norman worlds of the central middle ages.

THI-17 Abstract 02
Living on the Edge: Cheshire Castles in Context
Author - Dr. Swallow, Rachel, Altrincham, United Kingdom (Presenting author)
Keywords: Castles, Cheshire, Frontier
Presentation Preference - Oral

Landscape studies have seen considerable recent debate, resulting in the development of an interdisciplinary research environment. This reengaging castle studies by promoting new approaches and integrating others. However, in this work, the county of Cheshire in north-west England has been hitherto ignored, perhaps because few medieval documents exist for the county, and because relatively little archaeological excavations and survey have been undertaken on the county's castles. Interdisciplinary landscape research for Cheshire’s castles therefore distinguishes from previous studies, in its recognition, definition and presentation of the entire medieval county of Cheshire as a medieval frontier. Considered separate from England by its contemporaries, this frontier, and the unique power of the earls of Chester, provided the context for the multifarious purposes and forms of Cheshire’s castles. Placing the construction of the castle within the political framework of
Anglo-Welsh social and political relations is therefore an original dimension of this paper to both castle studies and to the study of the medieval March of Wales. However, the frontier of Chester also had influence beyond its boundaries: it was representative, and indeed pivotal, to changes within the British Isles. The county was clearly and intrinsically linked with the overall political, social and economic dynamics of not only England, but also Wales and the Irish Sea Province. This paper therefore questions traditional documentary and secondary source narratives, which have taken an icy Welch versus English cultural identities based on false or irrelevant, modern, and thus construcive, historic times periods and territorial boundaries.

**TH1-17 Abstract 03**

**Interpreting the archaeological record of medieval buildings in a borderland: a case study**

**Author:** Dr. István, Daniela Veronica, Braov, Romania (Presenting author)

**Keywords:** buildings archaeology, medieval church, Transylvania

**Presentation Preference - Oral**

My paper will explore the region of central-western Romania, commonly known as Transylvania, in the first centuries of the second millennium. This region was part of the kingdom of Hungary, but was in fact located on a confessional and ethnic frontier, between Orthodox and Catholic Europe, and in an area of bewildering ethnic and linguistic diversity—both factors responsible for giving the region its distinct character of a borderland. One of its most significant forms of expression of that character was religion: pagans, orthodox and catholics settled this area and found specific ways of living and practicing their beliefs.

Archaeology is indispensable for the understanding of the early period (10th-13th c.), for which there are very few, if any written sources. Although the study of built structures is a relative new sub discipline in the field of medieval archaeology, in the last decades has brought important contributions to the better understanding of the history of this area.

In my paper I will provide an accurate overview of this topic and focus on the ruined church uncovered recently in Alba Iulia fortress – the oldest medieval church ever found north of the Lower Danube. The ruins were unexpectedly uncovered during structural works, in a very complicated stratigraphic context, consequence of the use of the area during the last two thousand years. Preliminary, Roman, post Roman, and 8th-10th centuries’ habitation evidence was found beneath the church, which was in use for about a hundred years, until it was in turn pulled down during the second half of the 11th century, when the first Roman Catholic Cathedral was being built. Subsequently, the ruins were disturbed and partly destroyed by the 11th-13th centuries’ medieval graveyard and later still by numerous medieval and modern intrusions.

The analysis of this discovery (archaeological context, architectural features, building materials) offers a unique opportunity to explore the development of the Carpathian Basin around the year 1000.

**TH1-17 Abstract 04**

**Interpreting the Archaeological Record**

**PETRAPILOSA. Building and historical development of medieval fort**

**Author:** M.A. Viljins, Józsi, Croatian Conservation Institute, Svetvinčenat, Croatia (Presenting author)

**Keywords:** development, Medieval fort, preliminary reconstructions

**Presentation Preference - Oral**

The Medieval fort Petrapilosa is situated in the northeast of the Istrian peninsula in the Republic of Croatia. It is one of the largest, and as historical sources indicates, one of the most significant feudal forts in Istria. Systematic archaeological researches of the fort area have been conducted in the last six years that confirmed the lengthy and very dynamic development of this fort. The results of the archaeological researches in combination with the detailed analysis of the preserved wall structure, allowed us to distinguish eight stages of the fort's development. Evidence of this wide administration is found in the exceptional epigraphic record that is today held at the Diocesan Museum of Anagni. The record consists of a corpus of inscriptions all of which are ascribable to the same charta lapidaria, namely a documentary epigraph, a copy of a notary deed which lists chattels and landed properties attributed to the cathedral.

**TH1-17 Abstract 05**

**Medieval Roof Trusses in the Swedish landscape of Västergötland**

**Author:** Master Gullbrandsson, Robin, Västergötlands Museum, Skara, Sweden (Presenting author)

**Keywords:** Medieval churches, medieval roof structures

**Presentation Preference - Oral**

This paper deals with the methods and results of an inventory made 2014-2015 with the aim to survey what is preserved of medieval roof constructions in churches in the Diocese of Skara in the landscape of Västergötland of western Sweden. More or less intact roof trusses from the 12th century up until the first half of the 13th century are scarcely preserved outside Scania, which add up to the importance of mapping this unique unknown heritage in Sweden. Similar surveys have been made in the diocese of Lund, Skara, Stockholm, Stångås and Västervås between 2012-2015 and are about to be made in Linköping, thus giving us a more complete view of the grade of preservation.

164 churches in the Diocese of Skara have medieval origins. They are all situated in the old landscape of Västergötland. The survey has identified whole or partly preserved medieval roof constructions or traces of such in the attics of almost 70 of these churches. 28 roofs can be regarded as well preserved roof trusses with tie beam, dating from the 12th century and the first half of the 13th century. Ten are only partly preserved and 18 remains as reused parts in later constructions.

Some of the early medieval churches have been dated with dendrochronology and span from the 11th up to around 1250. A group of roof trusses with two cantilever struts (often meeting the rafters and tie beam) seems to belong to the oldest ones, though these are only partly preserved in a few geographically concentrated churches. The most common type of roof truss has crossed struts, the most advanced of them boasts six and the most simple two. Some of these roof trusses have decorative features or mountings for liturgical bells, which clearly shows that the earliest stone churches in the diocese did not have ceilings or vaults. Four early medieval tower roofs have been preserved.

From the end of the 12th century up until the beginning of the 16th century, very few construction are preserved. Probably there never existed any great number because of the economic and political decline for Västergötland after the plague and agrarian crisis in the mid-14th century. Roof trusses from these centuries exist today in 13 churches.

**TH1-17 Abstract 06**

**The Cathedral of Anagni. A case study of the evolution of Southern Lazio in the Middle Ages**

**Author:** Dr. Nastasi, Ariana, University of Roma Sapienza, Roma, Italy (Presenting author)

**Keywords:** buildings archaeology, cathedral, medieval Italy

**Presentation Preference - Oral**

The cathedral is one of the most distinctive buildings of the medieval city. Symbol of the power of the Bishop and of the Church and connected with the heart of Ostia representation by the city of Rome, the cathedral offers a valuable insight into medieval society. In Italy this type of building influenced settlement dynamics in different ways across the geographical areas. In particular, in Central and Southern Italy, the cathedral was often a site in conflict due to the proliferation of dioceses with limited territorial extent and uncertain boundaries subject to suppressions and unifications. It is within this context that the proposed case study of the Cathedral of St. Mary in Anagni - a city of central southern Lazio, about 25 kilometers west of Rome - is relevant.

Today this church presents a Romanesque architectural style, as designed and developed by Bishop Peter from Salerno, in the eleventh century. However, its history dates back at least two centuries earlier. A comparison between archaeological data and written sources points to the hypothesis that the first cathedral was built in the ninth century by Bishop Rumuald, which is based on the fact that today rests the Romanesque church. It is thus possible to reconstruct the development of the cathedral over the centuries from the Early to the Late Middle Ages. The church of St. Mary can be situated within the historical evolution of the territory at a time when the Carolingian kings recognised and guaranteed to the Church of Rome its spiritual and political power by granting it large portions of land to rule. Evidence of this wide administration is found in the exceptional epigraphic record that is today held at the Diocesan Museum of Anagni. The record consists of a corpus of inscriptions all of which are ascribable to the same charta lapidaria, namely a documentary epigraph, a copy of a notary deed which lists chattels and landed properties attributed to the cathedral.

The inscriptions, characterized by strong stylistic and palaeographic similarities, are engraved on parts of sculptural ornaments belonging to the liturgical decoration of the ninth century church. The examination of these inscriptions has generated two results. Firstly, a reconstruction of the extent and importance of the land donated to the church; secondly, a hypothesis about the original location of the marble pieces today decentralized by their display in a museum. The decoration engraved with inscriptions has an even more important value if we consider that many of the fragments were consciously reused by Bishop Peter from Salerno for the Romanesque makeover with a clear symbolic intent of reconnecting with a historical moment of supremacy of the Roman Church in which bishops, as local representatives, were the pinnacle of territorial power.
This paper will outline the importance of examining the full range of buildings found at the medieval hospitals of England, and how they interact as part of a complex, for understanding how these sites functioned, both physically and religiously. The medieval hospital first appeared in England in the 1080s, with two founded by Archbishop Lanfranc of Canterbury, and they lasted until 1547 when Edward VI passed the Charities Act, abolishing the practice of prayers for the souls of the dead. In the four and a half centuries between these dates, the medieval hospitals were utilised by the charitable to cater to a range of people deemed worthy of Christian charity. Whilst poverty was an overwhelming concern, this often manifested in care for sufferers of leprosy or in sheltering poor wayfarers and pilgrims, and often attention has focussed on seeing how different hospitals cared for different people. Unfortunately, this has often meant that examination of their underlying ideological foundation, especially architectural layout, has been left to previous architectural discussion of English medieval hospitals have focussed specifically on the refinery and its chapel, the most likely elements to survive as standing remains, and have otherwise noted little overall planning to the site, i.e., the rest of the buildings, such as kitchens or dormitories, are studied at all. Archaeologically, despite the ever increasing number of excavations from across the country, there has only been limited synthesis, the most complete by Roberta Gilchrist in 1995. In both fields the great variation in the nature and form of these buildings across the country has been noted and described as random, but medieval hospitals acted within a form of spiritual economy that also included institutions such as monasteries, nunneries, friaries, and chantries. Despite the overwhelming religiosity of nature of these institutions, the underlying presence of a structure to their space has never truly been investigated.

New research has suggested that when looking at these sites as a whole a hierarchy of space can be seen that implies that at some level there was a unified conception of how these sites should look and function, with areas to the south and east being ideologically higher than the north and west. Utilising case studies from excavated hospitals across England these structured spaces will be explored, from the famous St Mary Spital in London, to St Bartholome's at Bristol, to small pilgrim cells such as St Mary Magdalene at Patney, and suggest that the layout of English medieval hospitals was likely based upon religious ideology, social standing, and attitudes to gender. This paper will also highlight some of the implications this ordering of space may have had for those residing in the hospital complex, both staff and inmates. Ultimately the nature of the structured space is not surprising, given the mixed nature of these communities, with men and women, religious and secular, rich and poor, living together. What is surprising is the apparent ubiquity of this structuring across the country and throughout the later medieval period.

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**TH1-17 Abstract 08**

**Saint Gunther and the Central Bavarian Forest - Was his monastery the beginning of settlement?**

**Author:** Ranzinger, Mario, Heidelberg, Germany (Presenting author)

**Keywords:** Geoarchaeology, Monastery, Settlement

**Presentation Preference:** Oral

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**TH1-17 Abstract 09**

**Medieval Oslo's Masonry Buildings Revisited**

**Author:** Bauer, Egl, Norwegian Institute for Cultural Heritage Research, Oslo, Norway (Presenting author)

**Keywords:** Masonry buildings, Norway, Social topography

**Presentation Preference:** Oral

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**TH1-17 Abstract 10**

**The metalworker’s farm. A study of a medieval “bygård” in Oslo**

**Author:** Edman, Therese Marie, Norwegian Institute for Cultural Heritage Research, Oslo, Norway (Presenting author)

**Keywords:** Buildings and property, medieval town, Norway

**Presentation Preference:** Oral

Since 2013 the Norwegian Institute for Cultural Heritage Research has been excavating several sites in the medieval town in Oslo, in connection with a major railway project. One of the sites contained remains from several phases of medieval buildings with both domestic and industrial activity from the late 11th to the early 14th century. The paper aims to present one of the buildings in a Norwegian medieval town property, a “bygård”, literally a “farm in the town”. The building itself has at least two building phases, and possibly several phases of occupation and use. There are several ovens used for metallworking on the property, as well as evidence of domestic activities like a latrine and keeping animals. I will show how the use of the building and the surrounding property changes over time and how they fit into the context of the town. The excavations have shown that several of the neighboring properties may also have been used for metallworking. This could mean that the buildings and other features in the excavated area formed part of a metallworking district in the heart of the town of Oslo until a new law, Magnus the Law-mender’s law for the towns, was introduced around 1276. This law regulated metallworking activities to the fringes of the town because of the risk of fire. The excavated building was destroyed in a fire, demonstrating the need for such regulations.

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**TH1-17 Abstract 11**

**Finnish medieval brickmakers’ marks as markers of identity**

**Author:** BA Aalto, Ilari, University of Turku, Turku, Finland (Presenting author)

**Keywords:** Buildings, Identity, Symbols

**Presentation Preference:** Oral

Late medieval brickmakers’ marks used in the Nordic countries are a poorly studied set of symbols used by master brickmakers to sign their production. The signs consist mostly of symbols that derive from the common medieval imagery - attributes of saints, apotropaic symbols and letters. In Finland the brickmakers’ marks can be mostly found in still standing masonry buildings like castles and particularly churches. Lately they have also been found in excavations of urban sites. As the marks seem to have been personal, they often also a mean of relative dating of masonry buildings. It’s suggested here that these marks could be used to study both the medieval brickmaking industry and the visual and mental culture behind the marks. Furthermore the comparison of marks in different buildings makes it possible to study the geographic areas where the brickmakers worked. In this way the marks could reveal data about the craftsmen that has not been preserved in written sources. I will also bring up the question of the ethnicity of the medieval brickmakers who worked in the area of modern Finland. Were they Swedish-Finnish or German?

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**TH1-17 Abstract 12**

**To build the Medieval harbourside of Gammel Strand, Copenhagen, Denmark**

**Author:** Whatley, Stuart, Museum of Copenhagen, Copenhagen, Denmark (Presenting author)

**Keywords:** Buildings, Landscape, Medieval

**Presentation Preference:** Oral

From the Early Medieval period onwards, the harbourside of Copenhagen was constantly developed to provide a safe and profitable harbour for shipping and trade. By the 1400s, the harbourside had expanded southwards to Gammel Strand, and this area became
Urban life in an early byzantine small scale house

Author: M.A. Steinborn, Miriam, Römisch Germanisches Zentralmuseum Mainz, Mainz, Germany (Presenting author)

Abstract

The early byzantine settlement of Carinčin Grad in southern Serbia, which is supposed to be the imperial cityustiniana Prima, existed for merely 90 years. Without any marks of earlier or later occupation, the excavations provide undisturbed insight into everyday life in an early medieval settlement of the 6th century. Excavations in Carinčin Grad take place since 100 years. The early campaigns concentrated on representative buildings like churches, while the emphasis nowadays is on the living quarters.

Considering the concept and methodology of Househould Archaeology, one single room house was excavated in 2014 and 2015 in high resolution with integration of archаuobiology and soil science. The finds indicate a habitual function.

The interpretation of the building bases on the results of the interdisciplinary research. The simple configuration of the house and the multiplicity of potential types of use in a single room structure challenge the examination. This is the crucial point where field work and the theories of Household Archaeology come together. Working with an elementary constructed house and a few objects connected with specific activities restrict the possibilities which houses with many rooms and outdoor-areas may provide. It is necessary to examine the activities in- and outside the building to understand the function the household fulfills in the settlement system regarding social, religious and economic aspects. The building accommodated one or more persons who belonged to a higher or rather low social stratum. Taking their perspective on the settlement raises the question of their everyday life. The household can be seen as the place where social roles are negotiated in daily routine and thus as a social landscape where their daily activities display in little or large level.

The aim of this talk is to discuss the Late Medieval and Early Renaissance buildings uncovered in the Metro Cityring area. The interpretation of the building bases on the results of the interdisciplinary research. The simple configuration of the house and the multiplicity of potential types of use in a single room structure challenge the examination. This is the crucial point where field work and the theories of Household Archaeology come together. Working with an elementary constructed house and a few objects connected with specific activities restrict the possibilities which houses with many rooms and outdoor-areas may provide. It is necessary to examine the activities in- and outside the building to understand the function the household fulfills in the settlement system regarding social, religious and economic aspects. The building accommodated one or more persons who belonged to a higher or rather low social stratum. Taking their perspective on the settlement raises the question of their everyday life. The household can be seen as the place where social roles are negotiated in daily routine and thus as a social landscape where their daily activities display in little or large level.

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The rise and development of brick production in Vilnius, the capital of the former Grand Duchy of Lithuania, was inspired as strategically important craft. The production of bricks has been changing and improving during more than seven centuries. Therefore brick is an important source providing the knowledge about the technical development, production potential and cultural influence during different periods. The evaluation of physical and chemical properties of bricks would enable us to judge about the technological standards of Vilnius bricks, deviations from them and their reasons. The promising investigation methods of the old bricks are related to applied methods of exact sciences. One of them is geochemical method. The geochemical data statistically grouped using Ward's hierarchical clustering (Barcenclús, Tarakevičius, 2015, Archaeologia Lituana, xvi, p. 45-62) enables to hypothesise that: a) in certain chronological periods the material for construction of buildings and production of bricks could be extracted from the same or adjacent clay deposits similar in mineral composition; b) there existed brick production technologies specific for that period. So, it is possible to try to create peculiar “multivariate recalibration matrices” with as many as possible dated or characterised by other parameters samples. According to them it would be possible to determine at least approximate data of the newly found interesting brick of unknown chronology or to compare other features.

Geochemical investigations are understood as a complex of methods which includes: a) purposeful selection of brick fragment samples, b) multi-elemental method of determination of real total contents of elements, c) multivariate statistical analysis (cluster, factor analysis), d) analysis of the ratios of geochemical indices, e) graphical representation of data. Energy-dispersive X-ray fluorescence is usually used for investigation of chemical composition. Its advantage is that great number of chemical elements which can be determined including those related to clay minerals and their additives (Al, Ca, Fe, Mg, Na, K, Si, Ti) accompanied by specific trace elements (Ga, Co, Cr, Cu, Mn, Nb, Ni, Pb, Sr, Si, P, Br, Zn, Pb, etc.).

Aiming to obtain more precise interpretation of brick origin and technological processes using geochemical methods it would be useful: a) to take more (15) sub-samples from the same brick (avoiding the effect of random sample selection), b) to take samples from the inner part of the brick (reducing anthropogenicchemical component), c) to use multivariate analysis method with obligatory determination of total content of main major chemical elements and their specific satellites, d) to compile geochemical database of as many as possible exactly dated bricks (when a, b and c requirements are met), e) to select the set of chemical elements for multivariate analysis basing on various geochemical features (not only variability of composition), f) to verify and supplement the results of cluster analysis with the help of other multivariate statistical methods; g) to accumulate geochemical data on potential raw material (clay) deposits.

SOCIAL DYNAMICS AND TRANSFORMATION DURING THE LATE NEOLITHIC AND BRONZE AGE

Saturday, 3 September 2016, 09:00-13:00
Faculty of History, Room 330
Author - Antinset, Nils, University of Bergen, Bergen, Norway (Presenting author)
Co-author(s) - Valennt Eriksen, Bert, Stiftung Schleswig-Holsteinische Landesmuseen Schloss Gottorf, Schleswig, Kiel, Germany
Keywords: material culture, resources, technologies
Presentation Preference - Regular session

This session aims at exploring the avenues of social dynamics through periods of significant transformations during prehistory. In specific the session wants to highlight the Late Neolithic and the Bronze Age with particular focus on the LN/EBBA and EBBA/ LBA transitions. Are these just conceptual divisions, or are there material culture that provides an understanding of the social dynamics leading towards the observed profound transformation of the societies? We explicitly seek to frame these issues by exploring the relation between material culture and resources leading to social and political constellations and how this is framed by environmental differences.

What happens when resources and technologies change or are transformed? Further we want to question if there is a sharp decline in the LN, which gave rise to the BA, or if there are regional variations in this respect. Likewise, we want to question what happens during the transition to the LBA (Mont. I to IV) by analyzing the social dynamics involved. The session welcomes case studies and comparative studies addressing these themes, but also theoretical approaches on social dynamics in periods of transformation. The session will be geographically limited to the Nordic Bronze Age sphere including all parts of Northwest Europe (e.g. the Baltic states, Nordic countries and countries bordering the Atlantic).
Interpreting the Archaeological Record

How then should we perceive the Late Neolithic and Earliest Bronze Age societies of southern Scandinavia? One of the most significant features of the Late Neolithic was the ‘reintroduction’ of metal. Even though limited in number, the presence of metal objects bears witness to the establishment of far-reaching contact and exchange networks, which then developed further from around 2000 BC, as a result of increased links with the Unicite culture. The amount of imported metal had, however, not yet reached a level, which allowed the creation of formal hierarchies.

However, and depictions show the display of wealth and surplus, probably deposited as the culmination of large gatherings and feasts, which included the distribution of food and drink. The variation in length evident in contemporaneous daggers type indicates furthermore that supreme examples functioned as elite items that were used as status symbols, bride price etc. What we see is probably the appearance of some kind of big-man competition for power and recognition through feasts and potlatch-like give-aways. However, this status was not yet formalised into fixed hierarchies. One of the reasons for this lack of formalised hierarchisation was probably that it was difficult to monopolise the necessary raw materials (for example flint for the production of flint daggers).

Copper and gold, on the other hand, held opportunities for control by powerful and influential lineages or individuals, as these metals could only be obtained through exchange. Consequently, if upcoming chiefs were able to monopolise external exchange, increased demand could be facilitated and might have led to the formation of self-perpetuating elites. The occurrence of large ‘chieftain’ houses and the increasing number of metal objects evident from 2000 BC onwards shows that certain individuals and/or lineages were successful in creating a production surplus to be exchanged for metal objects and that these lineages were able to obtain influential positions in the exchange networks over time. The creation of chieftain structures was, of course, a long and complicated social process with no single explanatory factor, as clearly illustrated by copper imports in the Early Neolithic, which did not lead to the formation of formal hierarchies.

However, in contrast to the Early Neolithic, metal was, from around 2000 BC, an inevitable precondition for the production of ‘international’ status symbols and cup-and-spout weaponry such as daggers, halberds and spearheads, as well as gold and bronze rings etc. The necessity of obtaining bronze and gold meant that it became more difficult to manifest oneself as an influential individual or ‘big-man’ without access to these prestige goods. As such the rise of chieftains provided an opportunity for the development of large ‘chieftains’ houses and the increasing number of metal objects evident from 2000 BC onwards shows that certain individuals and/or lineages were successful in creating a production surplus to be exchanged for metal objects and that these lineages were able to obtain influential positions in the exchange networks over time. The creation of chieftain structures was, of course, a long and complicated social process with no single explanatory factor, as clearly illustrated by copper imports in the Early Neolithic, which did not lead to the formation of formal hierarchies.

The Bronze Age in Britain (c. 2200-800 BC) is the span of time in which inhabitants of the island truly shifted to wholesale use of permanent settlements. Before this period houses are largely limited to the Early Neolithic and are far fewer in number than those that may be attributed to the Middle Bronze Age and beyond. As such the Bronze Age provides an opportunity to truly understand a society which underwent profound social transformation as expressed in the shift to permanent settlements. However, despite extensive commercial archaeology and major research programmes, there are still no convincing explanations for the significant trends seen during this period such as: the relative invisibility of settlements from c. 2200-1500 BC (Allen 2005); the dramatically increased visibility of settlements after c. 1500 BC (Brück 2000); the emergence of apparently defended settlements and hillforts from c. 1200 BC (Brown 2008); and the perplexing and continuing absence of any villages (Rathbone 2013).

One of the typical features of the given period, intrusion of the whole body, is interpreted as the evidence of increased emphasis on the individual in funerary practice. This might be seen and has been discussed as enabling e.g. a remembrance of an individual or a creation of a bond between an individual belonging to some group and a particular part of landbase. In the paper I want to focus on the barrow cemetery of Five Knolls near Dunstable, South England, excavated in the 19th and early 20th century.

I use these barrows as an example on which I want to explore the ways in which the modernist concept of “individual” have been used to interpret the change in funerary practices, or, to put it more explicit – how the modernist concept of individual proliferates into the discussion of features within archaeological context. My aim is not to refute the idea of the individual altogether, but to explore other potential productive ways of interpreting the funerary practice based on close readings of the funerary material, which in this case is the barrow. Inspired by Judith Butler and her concept of citation in performance theory, I understand the grave as composed of references to the founding burial practice and not as an instance of the supposed rising role of the individual.

Keywords: Bronze Age, GIS, Settlement

The Bronze Age in Britain (c. 2200-800 BC) is the span of time in which inhabitants of the island truly shifted to wholesale use of permanent settlements. Before this period houses are largely limited to the Early Neolithic and are far fewer in number than those that may be attributed to the Middle Bronze Age and beyond. As such the Bronze Age provides an opportunity to truly understand a society which underwent profound social transformation as expressed in the shift to permanent settlements. However, despite extensive commercial archaeology and major research programmes, there are still no convincing explanations for the significant trends seen during this period such as: the relative invisibility of settlements from c. 2200-1500 BC (Allen 2005); the dramatically increased visibility of settlements after c. 1500 BC (Brück 2000); the emergence of apparently defended settlements and hillforts from c. 1200 BC (Brown 2008); and the perplexing and continuing absence of any villages (Rathbone 2013).

Previous analyses of Bronze Age living spaces in Britain have traditionally concentrated upon the structure and activities occurring within defined settlements or small settlement clusters (e.g. Popa 2003). Instead, this paper will present a new method that systemically compares the contents of settlement ensembles using the initial results of my PhD research, focusing on 60 settlements sites found solely within the southwest region of Britain (Wiltshire to Somerset, Gloucestershire to Dorset). I discuss the variations in these settlements placements over time in respect to contemporary and antecedent cultural and landscape features within their environs. These ensembles are defined through a custom cost surfaces model which has been used to estimate the maximum distances that might have been reached by occupants of these settlements, considering slope and terrain, within one day. The comparison of these ensembles’ contents has begun to identify trends in priorities of these site’s inhabitants in relation to both ‘economic’ and earlier ritual features which will be shown to change over the course of the Bronze Age.

By doing so I hope to present and explore the social transformations that must have occurred during the Bronze Age in Britain and to comment on how effectively this period represents a time in which society changed profoundly.
In 1973, Colin Renfrew published *Monuments, mobilisation and social organisation in Neolithic Wessex*. This seminal study examined how the amount of time invested in monument building changed throughout the Neolithic period in south central England. Renfrew's (1973) calculations appeared to demonstrate that the number of 'man-hours' invested in building monuments increased as the absolute numbers of individual monuments fell. On the basis of these findings, Renfrew (1973) argued that a number of hierarchical, centrally controlled chiefdoms had emerged in Wessex by the Late Neolithic/EBBA period. He surmised that whilst the smaller, tribal societies of the earlier Neolithic had built many, small monuments, the later and more populous polities of the Late Neolithic harnessed labour from vast geographically territories in order to build the few great henge enclosures of Stonehenge, Avebury, Silbury Hill, and Stonehenge.

The implications of Renfrew's (1973) study were far reaching; the great monuments of Wessex were, in effect, presented as the earliest evidence of hierarchical institutions exercising power and control in Britain. Moreover, in contrast to earlier, culture-historical models of the past, Renfrew's (1973) explanatory framework succinctly demonstrated how internal processes, not external, exogenous factors, could drive large-scale social change. Throughout the 1980s and 90s, however, a number of researchers began to question Renfrew's (1973) claims and the anthropological theory that underpinned them (e.g. Hodder, 1985; Barnett, 1994). They argued that functionalist and social evolutionist models like Renfrew's (1973) were simply a means of making the historically specific and unfamiliar comprehensible (Barnett 1994: 161). In fact, the actions and experiences of individuals -- the very things that actually constitute human history -- were erroneously being written out of these overly generalised accounts of the past.

This postprocessual view garnered particular popularity within the field of British prehistoric monumentality and, from the mid-1980s onwards, there was a rapid move away from quantifying the intrinsic properties of Neolithic monuments towards a structuralist consideration of the kind of social orders their form, material, or position in the landscape could have embodied (e.g. Parker Pearson and Richards 1994). This theoretical shift allowed archaeologists to successfully retell narratives of monumentality around the individual but it also had two other consequences. Firstly, the empirical basis of Renfrew's (1973) thesis was never thoroughly interrogated (though see Starnin and Bradley, 1981) and, secondly, alternative narratives of how changing monumentality fitted into large-scale upheavals within social organisation were eschewed. This paper attempts to redress this imbalance by critically examining Renfrew's (1973) claim that the labour expended on constructing prehistoric monuments steadily increased over time. Renfrew's (1973) methods are reviewed, replicated and his sample expanded so that a more comprehensive but comparable set of data are generated. These data are subjected to statistical and a variety of spatial analyses within a GIS package. The results are considered in terms of how they may be used to construct an alternative narrative of large-scale social change in Wessex from c. 4000 BC – 2000 BC.

TH1-18 Abstract 08

Making silent stones speak. A diachronic view on flint craftsmanship in Bronze Age Denmark

Author - Prof. Dr. Erikisen, Berit Valentin, Centre for Baltic and Scandinavian Archaeology, Schleswig, Germany (Presenting author)

Keywords: Bronze Age Denmark, craft specialization, lithic technology

Presentation Preference - Oral

An archaeological examination of lithic inventories from a number of Danish Bronze Age settlement sites will provide the basis for a discussion of the role of skilled mass production of lithic artefacts in past metal using societies. Based on a contextual chain operators analysis the paper will focus on the technological and socio-economic processes pertaining to raw material exploitation patterns and procurement strategies through time and it will examine the question of control over and access to resources. The concluding discussion will proceed to address the degree of craft specialization and the role of flint craftsmanship on a diachronic scale in relation to contemporary socio-economic structures.
The settlement is located in the north-western part of Orenburg region. About 800 square meters of the settlement area were investigated (1982, 2014-2015). The stratigraphy on the all excavation trench is the same. The lower cultural layer of the Eneolithic is 15-20 см. The tools made of blades are represented with end-scrapers, chisels, sharp points, arrow heads, and blades with dredging. The finding of an accumulation of semi-finished products and unbroken tip made of large bones of horse, bear, and deer horn, that were surrounded by flint microliths is very important. The found copper ingot which has been attributed as an object of Baltic origin also can be dated as Eneolithic. The BA-complex (Early Bronze Age) was well-represented findings as ceramics (about 2000 fragments of more than 50 vessels), animal bones, wrestages of construction stones, macro products made of sandstone and big pebbles, tools made of bones are numerous. Possibly, the findings of fragments of copper ore and slags, as well as stone casting moulds, are also related to this complex. The found pendant with through hole and small horns made of plain bone knife is similar to the materials of the early Yarmoy culture. Archaeozoological materials: the E-layer contains mostly the bones of domestic species: cattle and small cattle, dog, horse, and also of elk and beaver; the BA-layer contains predominantly the bones of domestic species and horse; the remains of wilding, including elk, auroch, bear, beaver, and fox, are live in number. The series of 15 radiocarbon data based on animal bones from all the sections of the settlement area, and from different depths was undertaken. The materials of E-complex have been dated approximately by 4900-4400 BC (cal). Above that, some materials have been dated approximately by 4250-3950 BC (cal). The series of radiocarbon data based on animal bones from the upper cultural layer confirmed previously established data based on the shadings ceramics from Turganic settlement I.156197 4710±80 BP. In total, the BA-layer could be dated by 3900-3400 not BC (cal). This dating corresponds with the well-known dates of the ceramics from Repin Hutor and Kyzyl-Hak I and II settlements, and from some other sites of Repin horizon of Early Yarmoy culture. The ceramics from the BA-layer of Turganic settlement is similar to the ceramics from these sites.

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FOOD CHOICE AND ALIMENTARY PRACTICES: FROM MEALS TO DIET AND FROM SITE TO REGION - THE DIFFICULTIES AND BENEFITS OF EXAMINATIONS OF DIET AND DIETARY PRACTICES

Friday, 2 September 2016, 09:00-16:00
Faculty of Philosophy, Room 201

Author: Balinov, Mikhail, Institute of Archaeology, Moscow, Russia

Keywords: Alimentation, Archaeobotany, Food choice

Presentation Preference - Workshop

The development of cooking and food preparation practices transform raw ingredients into edible food. This transformation is not only chemical, but also cultural. This forms part of what the anthropologist Claude Lévi-Strauss suggested sets humans apart from apes and makes us a “cooking animal” (1964: Le Cru et le Cuit). These complex actions (cooking and cultural assimilation) may take two forms, those which leave traces in the archaeological deposits and those actions which may leave no physical trace in the archaeological record.

When examining preserved food remains on a supranational level the environmental record within Europe has facilitated some successful studies for some regions and periods (Liversad and van der Veen 2008; van der Veen, Livarda and Hill 2008). The evidence of preparation techniques is supported by the remains of flora and fauna that are indicative of food choice and alimentary practices. Later, from the historic period onwards, we have textual documents which add much detail in form of economic documents, recipes, and personal observations on food consumption. But to what extent are these practices limited to different periods, cultures, peoples and places? And to what extent do modern political boundaries, differences in philosophical, or methodological approaches to archaeological remains limit our ability to create pan-European narratives on the nature of human food use from different periods?

This session aims to explore how food choice and alimentary practices in Europe changed through time, but also how these changes may be linked to culture, technological innovations, shifting borders and the rise and fall of civilizations. The session encourages researchers who have successfully studied different cultures or periods, passing existing cultural or political borders (e.g. from different cultures or European countries) or comparing rural environments to towns, but also those who have encountered difficulties when trying to operate such projects.

The Chenopodium album presence in Romania Prehistory.

Sign of consumption?

Author: Golea, Mihnea, National Institute for Research and Development in Environmental Protection, Bucharest, Romania (Presenting author)

Keywords: archaeobotany, Chenopodium album, seeds

Presentation Preference - Oral

From the oldest times, humans have been intentionally and selectively collecting the herbaceous plants. Often, such species were recognized for their contribution to vitamins and caloric enrichment in human's diet and also, of their medicinal properties. The evolution of human's culinary preferences was based, initially, on the natural products of their immediate environment. Alongside such plants (Polygonum lapathifolium, Fallopia convolvulus) the Chenopodium album L has medicinal properties and nutritious values (such as laxative, blood purifier, vitamin A, C and so on). This species' plant remains have been discovered in some Eneolithic and Bronze-Age archaeological sites in Romania. Although different discovery contexts imply different actions in using the plant, these discoveries can suggest the usage of this species, most probably as a supplement for human consumption.

However, only through discovery of a large quantity of seeds of Chenopodium album L. and knowing the contexts of discoveries, one can be sure of its usage and can suggest the awareness of this plant's properties and benefits for consumption. The cultural heritage of different countries such as old recipes of Chenopodium album L., has a substantial impact in the reconsideration of its use in prehistoric times. One can think that these dishes have an older origin, which can be used in explaining empirically usage of this plants. The findings of plant remains of Chenopodium album L. will be presented in a manner that it will put into light the intentions of gathering of this species in the prehistoric times. Also, based on the experimental studies we will try to show the cooking process of these plants and their mode of consumption.

This work was performed through the Partnerships in Priority Areas Program - PN II, developed with the support of MEN - UEFISCDI, project no. PN-II-PT-PCCA-2013-4-2302.
TH1-19 Abstract 02

Bronze Age foodways in the Carpathian Basin: similarities and differences, continuities and changes

Author - Priskin, Annamaria, University of Pécs, Pécs, Hungary (Presenting author)
Co-author(s) - Rosell-Mielí, Antó, Instituto de Ciencia y Tecnología Ambientales, Autonomous University of Barcelona, Barcelona, Spain
Keywords: Bronze Age, Carpathian Basin, subsistence economy
Presentation Preference - Oral

This has traditionally lead scholars to believe that the area is divided between culturally rather different groups. While in some respects this may be true, there is a considerable number of cultural traits that cross-cut such boundaries through both space and time. The aim of our paper is to examine if this is also true for Bronze Age foodways. 'Subsistence economy' is generally a rather neglect field of Bronze Age research in the region, and its wide-ranging cultural implications are rarely considered. In our paper we will examine the subsistence economy and foodways of the study area through the review of the available paleoecological and archaeological data, the study of macrofossil implements used in food production and of the ceramic repertoire used to prepare and serve meals. Our aim is to reveal if the reconstructed foodways of the Bronze Age Carpathian Basin show similar cultural boundaries as some aspects of material culture or cross-cut them instead.

TH1-19 Abstract 03

Evidence from experimental & organic residue analysis of beeswax and honey uses (Argaric Bronze Age)

Author - Dr. Mónica Muñoz, Elena, Autonomous University of Barcelona, Bellaterra, Spain (Presenting author)
Co-author(s) - Rosell-Mielí, Antó, Instituto de Ciencia y Tecnología Ambientales, Autonomous University of Barcelona, Barcelona, Spain
Keywords: beeswax, human feeding, organic residues
Presentation Preference - Oral

The Argaric society was developed during the Early Bronze Age (c.2200-1550 BC) in the South east of the Iberian Peninsula, and because of the existence of large scale societies in Continental Europe. This society had a very characteristic pottery repertoire with a degree of standardisation distributed in 8 ceramic forms. Nevertheless, the Argaric ceramics have generally been studied from a morphometric point of view, rather than their functional aspect. In this context, the organic residue analysis has been applied on just two occasions and over a small set of ceramics.

For the first time in an Argaric context, we have investigated the molecular and isotopic composition of organic residues (by gas chromatography and mass spectrometry) over a wide suite of ceramics (43 pottery sherds) from two of the main Argaric sites: La Bastida (Totana, Spain) and La Almoloya (Pleigio, Spain). One of the key results is the detection of invisible substances in (by gas chromatography and mass spectrometry) over a wide suite of ceramics (43 pottery sherds) from two of the main Argaric sites: La Bastida (Totana, Spain) and La Almoloya (Pleigio, Spain). One of the key results is the detection of invisible substances in (by gas chromatography and mass spectrometry) over a wide suite of ceramics (43 pottery sherds) from two of the main Argaric sites: La Bastida (Totana, Spain) and La Almoloya (Pleigio, Spain).

We detail the different steps of each process, as well as the different products, byproducts and residues resulting from each stage of the operation. This combined sum of experiences will be used to make some recommendations for future research on this issue, both in terms of necessary experimental work and the archaeobotanical analysis of these remains.

TH1-19 Abstract 04

Finding broken grain in the archaeobotanical record: ethnoarchaeobotanical and experimental approaches

Author - Dr. Antonin Ferran, Integrative Prehistory and Archaeological Science, Basel, Switzerland (Presenting author)
Co-author(s) - Alons, Naià, University of Lleida Lleida, Spain
Keywords: cereal milling, cereal products, dehusking
Presentation Preference - Oral

Cereals have been a major contributor to human diet in many parts of the planet during the past 10,000 years. They can be consumed in a large variety of ways (groats, bulgur, flour, bread, etc.), which makes the archaeological recognition of cereal food remains extremely difficult. In the last decade, a larger number of archaeobotanists have shown their concern for the identification of archaeological fragments of cereal grain produced prior to charring. Their identification seems to remain somewhat problematic, and their interpretation is open to discussion. They are often seen as evidence of bulgur production, but how can we exclude that they were not produced during cereal dehusking or threshing, or during flour production? During the last years we developed three independent lines of research that we would like to combine in this presentation. These are of different nature: ethnoarchaeobotanical, experimental and archaeobotanical.

TH1-19 Abstract 05

The diet of non-Romans living in the border area of the Netherlands

Author - Drs. Hondelink, Merit, ArcheoCarns Nvd b.v, Groningen, Netherlands (Presenting author)
Keywords: bio-archaeology, Food and alimentary practices, Roman Limes
Presentation Preference - Oral

The diet of non-Romans living in the border area of the Netherlands, as reconstructed by bioarchaeological research The Roman empire has been the subject of numerous archaeological and historical studies over the past decades. In the Netherlands, Roman occupation of the southern provinces has been studied intensively via archaeological research. Forts, villas and viili have been excavated and some have been reconstructed. The layout speaks to the imagination, as well as the ships used for transport. Recently, the Limes has been reconstructed to visualise the Roman border and demarcate the Roman province of Germany Inferior and the lands inhabited by the indigenous tribes.

It used to be thought that the arrival of the Romans brought on a culture shock in the area south of the Limes, imposing another lifestyle for the tribes living under Roman rule. However, archaeological and historical research has shown that this was not the case. The indigenous people assimilated and took over some aspects of Roman life whilst at the same time continuing with some of their own traditions. Roman culture mixed with the traditional lifestyle of the peoples of Germany.

An important part of culture are food and alimentary practices. It is what you do and do not eat, how we eat, how we prepare food, how and how we think about food that is culture bound. It is assumed that in some way, the Roman foods took root where necessary. This has been proven for some sites in the occupied area of Germany Inferior. However, little is known about the food and alimentary practices of the non-Romans living north of the border. We know that both sides of the border traded with each other supplying the other party with men, materials and perhaps produce. But to what extent was the diet of non-Romans living above the Limes border influenced by the neighbouring Romans? This paper tries to answer this question using archaeological, ethnobiological and archaeological data retrieved from archaeological excavations in the area north of the former Limes.

TH1-19 Abstract 06

Islamic diet and agricultural practices in rural al-Andalus: new archaeobotanical evidences

Author - Dr. Ros, Jerome, UMR7209, CNRS/MHNN, Paris, France (Presenting author)
Co-author(s) - Dr. Gillette, Sophie, UMR6148, Cihan, CNRS, Lyon, France
Co-author(s) - Dr. Gasco, Sebastienn, Universidad de Picardie Juiles Veme, Amiens, France
Co-author(s) - Dr. Sénez, PINP, Université Paris IX-Sorbonne, Paris, France
Keywords: al-Andalus, archaeobotany, Islamic diet
Presentation Preference - Oral

In the literature (i.e. Watson, Aubâile-Sallanove, Decker), it is stated that the beginning of the Islamic period (7th c. A.D.) led to the development and spread of a new type of agriculture, event often characterised as “the Islamic agricultural revolution”. This “new” agriculture would have been based on several criteria: spread of new irrigation methods, use of intensive fertilizers, spread and improvement of several agricultural practices (i.e. grafting), development of spring crops, broadening of the diversity of plants exploited and spread of new species, development of new varieties. A recent synthesis led on agriculture in al-Andalus lists 47 plant species, introduced or spread by arab-berber populations. Nonetheless, the knowledge we have of Islamic diet and agriculture in al-Andalus is mostly based on three types of sources: written sources (i.e. agronomic, medical, food treatises, tax sources, etc.), iconographic sources (illustration of said treatises) and archaeological sources (i.e. excavation of irrigation structures). Data documenting directly these questions remain scarce, especially for rural areas.

The ethnoarchaeobotanical research aimed to record the steps involved in grinding and the many by-products obtained from this process. These change according to species and the desired product. The work was conducted in the villages of the Guernier Berber tribe (Kaf, western Tunisia), where women still perform many of the domestic tasks related to the preparation of cereals for consumption, and they still often mill with rotary querns. This involved the manual cleaning and grinding of bread wheat and durum wheat, and the cleaning, roasting and milling of hulled barley. We detail the different steps of each process, as well as the different products, byproducts and residues resulting from each stage of the operation.

The experimental research consisted in the dehusking of several cereal species using different techniques and different pre-treatments in order to observe the degree and type of breakage that was produced on the grains. Finally, a systematic analysis of the grains produced prior to charring in Neolithic sites of the NE of the Iberian Peninsula was conducted. We were not only quantified but also the type of fragment and the size were recorded, as potential relevant variables to understand the process that generated these fragments.
Since 2013, archaeobotanical studies are led on the Islamic rural settlements of Albalat (Extremadura, Spain) and Las Sillas (Aragon, Spain). These studies, based on about 150 samples extracted from various types of domestic (kitchens, ovens, storage and patios) and craft (forge) contexts, allow us to propose a first review on past agricultural biodiversity and practices in rural al-Andalus, based on direct material evidences. From the analysis of the carptological samples, 19 cultivated/gathered taxa were found: 7 cereals, 1 pulse, 1 technical/plant and 10 fruits, and approximately an additional 20 weeds/wild plants. This communication will characterise Islamic diet and agricultural practices in rural al-Andalus, compare the spectra obtained with those existing during previous periods and enlighten the possible introduction and role of “new” or “exotic” plants in rural contexts.

TH1-19 Abstract 07
PLANTCULT: An investigation of plant foods among prehistoric cuisines of Europe

Author - Prof. Valamoti, Soultana Maria, Aristotle University of Thessaloniki, Thessaloniki, Greece (Presenting author)
Keywords: ancient plant foods, prehistoric Europe
Presentation Preference - Oral

The plant component of cuisines of Europe’s prehistoric farmers, together with the associated transformation equipment such as grinding equipment, cooking vessels and cooking installations, will be explored within a five-year research project titled PLANTCULT, recently funded by the European Research Council (ERC). The project will investigate culinary practice among early European farming communities, from the Aegean to Central Europe, spanning the Neolithic through to the Iron Age (7th–1st millennia BC).

A collaboration between the Aristotle University of Thessaloniki in Greece (author), IPNA-Basel University in Switzerland (Prof. Stefanias Jacomet), University of Hohenheim in Germany (Dr. Hans Peter Sikila) and University of Vienna (Dr. Andreas Heiss) this newly launched project seeks to identify the ‘food cultures’ of prehistoric Europe, and to reconstruct how cultivated and wild plant foods were transformed into dishes, exploring their underlying cultural and environmental contexts and their evolution through time. The project will explore how culinary identities were shaped through the selection of plant foods, both in terms of ingredients as well as processing and cooking practices. Through the examination of macroscopic and microscopic remains of plant foods, combined with experimental replication of various aspects of food preparation techniques, originaligraphic investigations and insights of ancient texts, the project aims to provide a multifaceted and integrated approach of Europe’s cuisine during late prehistory.

In presentation we focus on the data and methods that will form the basis of the project and present an overview of the available data, research questions and lines of investigation that will be followed to address them.

TH1-19 Abstract 08
Medieval alimentation habits deduced from archaeological studies of cesspits

Author - Dr. Wetelhod, Julian, Inrap, Metz, France (Presenting author)
Keywords: Archaeobotany: Early modern times, late Middle Ages
Presentation Preference - Oral

Medieval alimentation habits deduced from cesspits: a comparison of archaeological results from cesspits of towns in eastern France and from the Baltic harbor towns of Stralsund and Greifswald in northeastern Germany.

Cesspits fillings are the most commonly studied contexts in late medieval and early modern archaeobotany. In most cases, especially when waterloged plant remains were retrieved, abundant plant remains were recorded, but the archaeobotanical data sets from cesspits are hampered by taphonomic problems. Oils, plants, spices, collected and wild fruits are in most cases much better preserved than cereals and pulses. Nevertheless, despite quite different preservation conditions for different types of plant food these embalmments of faecal remains and kitchen waste are most suitable for comparisons due to a high number of recorded taxa of cultivated and wild edible plants used from human consumption. Rescue excavations conducted by the Institute national de recherches archéologiques préventives (Inrap) in the medieval towns of Sambourg and Toul in eastern France revealed waterlogged and mineralized plant remains in huge quantities. These towns have developed since Roman times and some of the recorded spices and other cultivated plants are at least introduced since Roman times. These data of recent studies are confronted with archaeobotanical results from late medieval and early modern cesspits coming from the harbor towns of the Hanseatic League and the Hansestadt Greifswald which developed from the 13th century onwards. During medieval times both towns were part of the Hanseatic League and the medieval and early modern commercial network of the Baltic trade gave access to some imported luxury products like black pepper, cardamom, rice and others. In contrast to these harbor towns with wide-spread commercial contacts the studied towns in eastern France played a more modest role during late medieval and early modern times.

The communication aims to compare archaeobotanical data from two different regions without direct commercial contacts to study aspects of the social and economic background of plant food and alimentation and choices made by Man.

TH1-19 Abstract 09
Aspects of the Diet of the Medieval Population (10th – 12th Century AD) in Northern France: the archaeobotanical study from the castle of Boves and surroundings sites

Author - Dr. Preiss, Sidonie, Royal Belgian Institute of Natural Sciences, Brussels, Belgium (Presenting author)
Keywords: diet, medieval period, social status
Presentation Preference - Oral

Archaeobotanical investigations from medieval sites in Northern France have provided charred and mineralised plant remains (seeds and fruits). Despite some taphonomical constraints of the different preservation of these plant assemblages, archaeobotanical analysis revealed valuable information on the diet, food choice and alimentary practices of the medieval population in Northern France between 10th and 12th Century AD. The archaeobotanical results were influenced by the different types of features from which macro-remains were retrieved and by the reliability of the studied samples. Many seeds and fruits remain, especially found in latrines and/or dump pits, were used to understand the alimentary practices of the populations studied.

The social context of the archaeological sites is heterogeneous. Therefore, it’s possible to compare and to discuss the potential of archaeobotanical data helping to identify social differences by defining archaeobotanical indicators of social level from the food practices and the diet. Indeed, we can define and approach some direct (presence of certain species, taxonomic size spectrum…) and indirect indicators (method of administration, food preparation, food quality, such associations…) of the social status.

TH1-19 Abstract 10
The contribution of pollen analysis to the archaeobotany of cesspits

Author - Dr. Deforce, Koen, Royal Belgian Institute of Natural Sciences, Brussels, Belgium (Presenting author)
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Keywords: cesspits, diet, pollen
Presentation Preference - Oral

Archaeobotanical analysis of cesspits is an important source of information on former diet, medical practices and other types of plant use. A large range of food plants such as leafy vegetables, herbs and spices of which only the leaves or flowers are used, generally remain invisible or occur only very sporadic in the macrofossil records. This is because these plants are harvested and used as food before they produce seeds. As a result, little is known about the import, local production and consumption of many of these plants in the past.

The former use of some of these plants, such as garden chervil (Anthriscus cerefolium), beetroot/chard (Beta vulgaris), borage (Borago officinalis), capers (Capparis spinosa), spinach (Spinacea oleracea) and many other plants can be demonstrated by pollen analyses of archaeological remains of cesspits however. This paper now presents a first overview of a large set of pollen data from Roman, medieval and post medieval cesspits from Belgium and the Netherlands for several of these plants and discloses the use during the respective periods.

TH1-19 Abstract 11
Animals, Meats, Waste and Garbage in Medieval Visby

Author - NA Malmborg, Gustav, Uppsala University, Visby, Sweden (Presenting author)
Keywords: Medieval Visby, Social Economic, Zoisarchaeology
Presentation Preference - Oral

Faunal remains may give important clues to subsistence strategies, utilisation of meat and man – animal relationships in urban contexts. Bones are often recovered in various types of contexts that offer different opportunities to highlight aspects of urban “life”. The Medieval city of Visby on the Island of Gotland has a unique system of latrine chambers, each belonging to a separate house and, thus, one specific household. From an osteoarchaeological – and also social archaeological – the find material in the latrines are interesting since it may be assumed that they represent one household only. The latrine contents offer a possibility to investigate differences between households with a wastefall not offered by open-air context such as yard deposit or out-door refuse areas where faunal remains are found commingled. The latrines were constructed under the houses and a number of them have been excavated. When in use, garbage and refuse material – including faunal remains – was deposited in the latrines which had to be regularly emptied. Thus, the latrine finds offer a good opportunity to identify specific meat-cuts and other preferences which may turn highlight differences between the households, differences over time. Differences in economic – and in the end life conditions in Medieval Visby.
Interpreting the Archaeological Record

TH1-19 Abstract 12
Problems and progress in the study of postmedieval archaeobotany in London
Author - Stewart, Karen, Museum of London Archaeology, London, United Kingdom (Presenting author)
Keywords: Archaeobotany, Postmedieval, Food choice and alimentary practices, Urban
Presentation Preference - Oral

In the 18th and 19th centuries, London was at the heart of the British trading empire. The collection, propagation and cultivation of new plant species from its colonies was a focus of the British Empire and its naturalists, and this had a huge impact on foodways in Britain. Archaeobotanical evidence from this period has tended to be underevaluated in the past, with funding often biased towards earlier periods. This paper will demonstrate the results that can be gained when environmental research aims are fully incorporated into the project design from the outset, presenting some lessons learned and data produced from a commercially excavated site in the centre of London. Well preserved archaeobotanical remains from this site help to build a picture of London society in the 18th and 19th centuries. Results show that the occupants of the site had access to plants from the Americas and Asia, as well as those grown more locally, though the continued absence of certain plants in the archaeological record was also noted. The use of imported plants for the production of alcohol was also found at the site, presenting evidence of the ‘Gin Craze’ which swept London in the 18th century.

TH1-19 Abstract 13
Unmasking millet from a multi-proxy approach
Author - Vigil-Escalera Guirado, Alfonso, University of Salamanca, Madrid, Spain (Presenting author)
Co-author(s) - Aceituno Bocanegra, Francisco J., Universidad de Antioquia, Medellin, Colombia
Co-author(s) - Garcia-Collado, Mate I., University of the Basque Country UPV/EHU, Vitoria-Gasteiz, Spain
Keywords: biases, invisible food, millet
Presentation Preference - Oral

An extensive palaeoecological sampling program was carried out at the Early Medieval village of Gózquez (central Spain, AD 525-750). It is one of the most comprehensive collections of botanical remains so far analysed for this kind of geographic and chronological area. Around 8,800 items from 34 positive samples were retrieved. Hulled barley and free-threshing wheats were the dominant species. Hulled barley and rape were present in minor proportion, and Avena only sporadically. In this setting, any trace of millet production and consumption seemed to be completely absent.

Other carbon and nitrogen isotopic analyses performed on bone collagen of 40 individuals buried in the cemetery and some sites of the same village revealed a first surprising result: villagers widely consumed C4 plants. Since no such crop was identified in any trace of millet production and consumption seemed to be completely absent.

Other carbon and nitrogen isotopic analyses performed on bone collagen of 40 individuals buried in the cemetery and some sites of the same village revealed a first surprising result: villagers widely consumed C4 plants. Since no such crop was identified in all the four items analysed in the first round, in addition to wheat, barley and oats.

At this point, we realised of several possible explanations for the invisibility of the production and consumption of millet at Gózquez. Insufficient sampling, unwin preservation of carbonized plant remains, or complete distinct routines in the processing of different cereal types may be possibly argued. Whatever the right explanation, this case study suggests that we should be extremely cautious when drawing conclusions if there is no way to consider unexpected biases on archaeobotanical and palaeoecological records.

TH1-19 Abstract 14
Meals on Wings: Multi-strand investigation of avian contributions to diet and nutrition
Author - Dr. Best, Julia, Bournemouth University, Poole, United Kingdom (Presenting author)
Co-author(s) - Dr. Malloy, Mark, Bournemouth University, Poole, United Kingdom
Keywords: Avian Archaeology, Eggs, SEM
Presentation Preference - Oral

Today, birds, and especially the chicken, provide huge quantities of food products – both as meat and eggs. However the archaeological investigations of avian contributions to diet have oftentimes limited in extent and application. Eggs form an important part of avian-human interactions both today and in the past. However, eggs are one of the more challenging avian dietary areas to address due to the fragility of eggshell in acidic soil conditions, the need for rigorous retrieval processes, and the resources needed to identify archaeologically eggshell to species. Eggs can be sourced from wild and domestic birds, but due to the creation of extended laying times in several domesticates, egg acquisition is frequently weighted towards poultry. Ducks, geese and other birds can all be kept for their eggs, but the chicken plays perhaps the most important role. As such, this work focuses on chickens but is contextualised within the wider body of archaeovian evidence. Such examination allows fuller understanding of past avian-human relationships in the context of diet, economy, society, and (particularly for wild birds) the environmental and seasonal aspects of their relationship. This paper investigates egg use in the past by combining zooarchaeological and scientific analysis of physical eggshell remains from archaeological sites with evidence from document sources and material culture. Identification, via the new technique of ZooMS (Zooarchaeology by Mass Spectrometry) and exploration of developmental stage via SEM (Scanning Electron Microscope) can be used to examineuban bird practices, fowling, and resource use in the past by informing on meat and egg production.

Determining the hatching profile of archaeological eggs can indicate whether these were being utilised to produce live animals or as a direct egg food source. As such new methods of analysing eggshell material are allowing unprecedented insights into these areas of food choice and nutrition. Document sources, where available, are valuable for aiding these studies and include letters and orders (e.g. the Vindolanda tablet), and agricultural guides detailing husbandry and husbanding practices (such as Columela’s Res rustica). Using case studies from Roman and Medieval Britain this paper demonstrates how multidisciplinary integration of eggshell analysis with other lines of evidence can offer new insights into avian contributions to diet and food selection. These case studies are then situated within the extended application of this methodology to a wider European dataset (including material from France, Portugal, Turkey, Romania and Estonia) to explore the challenges and benefits of applying these approaches across a wide geographic and temporal area, and on material from a diverse body of archaeological sites which range from Neolithic tells to Post-Medieval monasteries.

TH1-19 Abstract 15
Diagenesis, biostratigraphy and taphonomy: Seeking out the pathways to destruction or preservation
Author - O’Meara, Don, Newcastle, United Kingdom (Presenting author)
Keywords: Archaeobotany, Taphonomy
Presentation Preference - Oral

This presentation will argue that the catch-all term ‘taphonomy’, when used to describe a seamless or continuous process, distracts from the differing cultural and natural formation processes which act together to preserve or destroy the archaeological record. Through the influence of zooarchaeological taphonomic experiments and observations (which have reached an increasingly advanced level) archaeobotanists often have recourse to ‘taphonomy’ as an explanation for how assemblages may present a biased record of the past. However, with few actualistic experiments to determine what the primary taphonomic processes might be within a burial system the understanding of preservation within archaeobotany is based on inference rather than experiment. This presentation discusses the cases of the product of digestion and highlights the difficulties for the archaeobotanist in interpreting the recovered assemblage. Understanding the effects of multiple taphonomic agents, often acting independent of each other but combining to alter the environmental record is a key to understanding the nature of the recovered assemblage. Using evidence from medieval historical sources, experimental taphonomy work, and an archaeobotanical study of urban cesspit remains from England this presentation will highlight the gaps in our knowledge and argue that we need to develop new methodologies for approaching urban remains, or begin the treat the record as the preservation of multiple separate assemblages with shared taphonomic routes into the archaeological record, but not shared taphonomic routes in the post-burial environment. It is hoped that in the course of discussion researchers from across Europe will be able to present their own observations to stimulate debate on how we approach these problems.

TH1-19 Abstract 16
Reconstructing the Greek Byzantine Diet using a comparative analysis of archaeozoology, isotope studies and literature
Author - Janine, van Noorden, Leiden University, Leiden, The Netherlands (Presenting author)
Keywords: Late Byzantine period, archaeozoology, faunal remains, Euboea, Chalcis, Venetians, dietary variation, animal exploitation
Presentation Preference - Oral

Until now, not much archaeological research has been conducted on faunal diet in Late Byzantine Greece. Most of the knowledge on the diet in Greece from this period is based on literature studies. Recently, isotope studies have also contributed to wider knowledge. However, so far no archaeozoological analysis has been conducted, focussing in this topic. The main goal of this research is to contribute to filling the lacuna of knowledge of the food supply in the Late Byzantine period in Greece and comparing the results to the existing data from isotope and literature studies.

As a case study for this research, faunal material from Chalcis will be studied. In Byzantine times, between the 10th and 12th centuries, Chalcis was the harbour for Treibe in Boeotia, one of the most important centres in this region. Later, from the 13th century, the city become a trading colony and transit port for the Venetians. The excavated material from a rescue excavation in...
The current city centre is extremely diverse (including glazed and unglazed earthenware, metal, glass, coins) especially within the material culture (i.e. wooden remains, burial relics, amphora for transport). This indicates that Chalcis was an important distribution centre with contacts in Venice and Constantinople. This makes the research interesting not only by creating a dietary image of Byzantine Greece, but also to see whether intercultural changes in diet have taken place between the Late Byzantines and the Venetians. From its prominent geographical location, Chalcis, with its well analysed stratigraphy and vast quantity and quality of faunal material, it offers the unique possibility to fill the absence of knowledge surrounding the food supply of the Byzantine period in Greece.

This paper is in progress and I will present my first results and problems during this conference.

TH1-19 Abstract 17
Analysis of a latrine from 17th century Copenhagen, Denmark

Author: Dr. Hald, Mette Marie, National Museum of Denmark, Copenhagen K, Denmark (Presenting author)
Co-author(s): Moesfeldt, Jacob, Museum of Copenhagen, Copenhagen, Denmark
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Keywords: archaeobotany, diet

Presentation Preference - Poster

During archaeological excavations in central Copenhagen a latrine dated to the 1680s was uncovered. The poster presents results from the combined analyses of animal bones, waterlogged plant remains, pollen, and eggs from intestinal parasites found in the latrine. The results show how the diet of the local users of the latrine was varied, including several types of fish, pork, a range of cereals, herbs and fruits, some of which were exotic. The number of intestinal parasites also shows that hygiene was rather low. DNA analysis of the parasite eggs is carried out in order to get to a species determination as well as investigating the zoonotic potential. The archaeological material from the vicinity suggests that the local inhabitants would have been in contact with traders from the Netherlands, based on the architectural, numismatic and ceramic finds. This is corroborated from the find of buckwheat chalk in the latrine, which is known to have been used a packaging material for goods exported from the Netherlands, while being only a very minor crop in Denmark.

TH1-19 Abstract 18
Middle Bronze Age spread of broomcorn millet in N-Italy: cultural choice or environmental change?

Author: Dr. Perego, Renata, Integrative Prehistory and Archaeological Science IPNA/IPAS, Basel, Switzerland (Presenting author)

Keywords: archaeobotany, Middle Bronze Age, Panicum miliaceum

Presentation Preference - Poster

In the Neolithic Northern Italy, broomcorn millet (Panicum miliaceum) remains are sporadic and doubtful. Certain identifications originate from two Chalcolithic sites: Monte Covolo and Velturno-Tanzgasse. Nevertheless, these finds are represented by single grains. Panicum is still sporadic in Early Bronze Age (EBA), while it expands from the Middle Bronze Age onwards and reaches its maximal diffusion in the Iron Age and in medieval times.

The huge amount of broomcorn millet remains in the Middle Bronze Age (MBA) layers of the Lavagnone site (Garda region), are of importance as they are found in stratigraphic continuity with underlying EBA layers. This allows analysing quantitative changes in plant macroremains spectra, shedding light on the acquisition of new crops at the Early to Middle BA boundary.

After this transition, we observed a higher biodiversity in the plant fossil assemblage, marked by increase and diversification of the terrestrial herbs. The occurrence of many new taxa accounts for a diversified and wider open land. Most of these newly introduced taxa (e.g. Agropyron repens, Medicago minima, Chithium intybus, Oropogon acanthum, Plantago sature). Silene stilies, Verbascum sp.) favour dry and warm habitats. It is in this scenario that broomcorn millet started to be widely cultivated. The ecological tolerances of broomcorn millet should also be considered in order to explain its adoption in a multiple cropping system. It is a summer crop, sow very late in spring, as it does not withstand frost during germination. It grows well in regions characterized by warm and Mediterranean-type climate with a short rainy season, on poor soils and under severe droughts.

The MBA Garda region held very well all these environmental features. All in all, ecological drivers seem to have played a significant role in spreading the cultivation of broomcorn millet in the Garda region. Furthermore, social processes and economic relations are not to be excluded in the perspective of an overall process of improvement of crop husbandry practices.

We can conclude that the plant economy of Middle Bronze Age in Northern Italy is well characterized by introduction of new cultivars (broomcorn millet), together with an intensification of pulse cultivation (horsebean), and a diffusion of rotation systems.

TH1-19 Abstract 19
Unravel the Medieval Islamic diet: preliminary data from the malacofauna of Tejo do Praio (Portugal)

Author: Branco, Rute, Universidade do Algarve - FCHS/ NAP, Faro, Portugal (Presenting author)
Co-author(s): Valente, Maria Joio, Universidade do Algarve - FCHS/ CEAAP Faro, Portugal
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Keywords: Diet, Islamic, Zoarchaeology

Presentation Preference - Poster

The Tejo do Praio site is a Medieval Islamic settlement dating from the 10–12th century, located in Quinta do Lago in Loulé, Algarve, Portugal. Nowadays, the site is approximately 1.6 km from the coastline, within the Ria Formosa Natural Park. The unique nature of the site - due to its rural nature, residential areas, types of structures and proximity to the coastline - raises several questions, such as the importance and characterization of the exploitation of aquatic resources for this Islamic community.

The main objectives of this study are to understand the local diet, to characterise the exploitation strategies of wildlife resources and to do an environmental characterization of the area during the occupation period. The results will then be integrated in what is already known for other Medieval Islamic contexts in Algarve. For this we will do the zoarchaeological analyses (classification of remains, abundances, anthropic and other modifications, bioenergy) of the aquatic invertebrate remains. Ultimately, zoarchaeology informs us on diet behaviour by studying the mechanisms used in the exploitation of natural resources by past societies, the processing techniques developed for animal resources and the possible trade of resources and commercial routes.

So far data show a greater abundance of Cerastoderma edule (common cockle), followed by Rudilipes decussatus (clams), species that presently are quite common in region, well known as the highest mollusk production area of Portugal. Among other identified species are Ostrea edulis (oyster), Mytilus cf. galloprovincialis (mussels), Solen marginatus (razor clam), Venus verrucosa (venus) and remains of Pectinidae family (scallop). The level of fragmentation is very heterogeneous across the contexts, from a mix of pre- and post-depositional agents.

TH1-19 Abstract 20
Parasites in archaeological deposits. How to interpret their presence and how to recognize them?

Author: Dasdero, Anna Maria, INRAP, Paris, France (Presenting author)

Presentation Preference - Poster

The study of archaeological deposits reveals a lot of information about the ways of life and the food economy of the ancient communities. Diet food, farming methods and the surrounding environment are not the only information that we find during the study of the finds. Often, pests and insects are part of the organic assemblages. Recognize and interpret these remains is not always easy. The following posters will analyze a study of a stabbing of the fourteenth and fifteenth century in the northeast of France.
Fishing was one of the simplest sources of livelihood in prehistory. Where available, fish constitutes an important food resource. Apart from the nutritional value, all parts of the fish have been utilised for various purposes. Humans’ adaptive and innovative ability to conquer new-ecological niches and to respond to environmental stress led to the invention of new fishing technologies and, e.g., mass-harvesting facilities and highly organised procurement strategies.

Sometimes fisheries are labour-intensive and collective effort may have been required. Hence, fishing techniques may be closely related to the socioeconomic, cultural, and sociopolitical systems in fishing communities, as well as to population dynamics. Cultural constraints, behavioural interactions, and social norms might have regulated fishing and the consumption of aquatic resources. Exploitation technologies might express group identity, and provide insights into contacts and communication between different fishing societies. Still, aquatic resources and procurement technologies are often poorly visible in the archaeological record. Therefore, knowledge about the importance of fish in prehistoric subsistence is often quite uncertain.

This session aims to deepen current knowledge within the framework of local, supra-regional, and diachronic development and application of active and passive fishing technologies in the harvesting of aquatic resources as well as other linked activities. Where direct evidence of fish utilisation is insufficient, various forms of indirect evidence are employed. Settlement patterns, site location, fishing technology, and resource specialisation reflect the utilisation of fish as a food source, or as a source of raw materials. Therefore, apart from studies utilising archaeological fishing-related materials, we would also like to encourage researchers contributing studies applying analogous data, from the viewpoint of, e.g., ethnicity, ethnology, and ethnohistory to help build the frames of reference and further our understanding about fishing as a phenomenon and its dynamics in the long term.

**TH1-20 Abstract 01**

**Introduction. Regional and chronologial development of fishing**

**Author:** Løkke, Harald, Centre of Baltic and Scandinavish Archaeology (ZBSA), Schleswig, Germany (Presenting author)

**Co-author(s):** Bergvick, Knut Andreas, University Museum of Bergen, University of Bergen; Bergen, Norway

**Co-author(s):** Klobøl, Sten, Institute of Prehistory and Early History, Christian-Albrechts University, Kiel, Germany

**Co-author(s):** Kiviola, Satu, Department of Archaeology, University of Helsinki; Helsinki, Helsinki, Finland

**Co-author(s):** Pedersen, Lisbeth, Kalundborg, Denmark

**Presentation Preference:** Regular session

Fishing has been one of the simplest sources of livelihood since the early days of human prehistory and therefore fish constitutes an important food resource for human societies in water rich areas with access to lakes, rivers and coasts. Fish is a significant source of protein, an element vital to human nutrition. Apart from the nutritional value, all parts of the fish have been commonly utilised for various purposes. Fish are relatively easy to catch even with the simplest equipment and therefore this wild food resource was exploited with varying intensity through time employing different technologies in a wide range of aquatic landscapes. The humans’ adaptive and innovative ability to conquer new-ecological niches and to respond to environmental stress has led to the invention of new fishing technologies and developing, e.g., mass-harvesting facilities and highly organised procurement strategies. Sometimes fisheries are time-consuming and collective labour may have been required to make the most of the seasonally abundant resources. Hence, fishing techniques may be seen as closely related to the socioeconomic, cultural, and sociopolitical systems affecting the fishing communities, as well as the population dynamics.

**TH1-20 Abstract 02**

**Discontinuities in fishing practices at the onset of Neolithic: a case study from Starcevo**

**Author:** PhD candidate Živajčević, Ivana, Laboratory for Bioarchaeology, Belgrade, Serbia (Presenting author)

**Co-author(s):** Stefanović, Srećka, Laboratory for Bioarchaeology, Belgrade, Serbia

**Keywords:** Early Neolithic, Fishing, Starcevo

**Presentation Preference:** Oral

Whereas the significance of fishing is well documented at a number of Mesolithic and Early Neolithic (c. 9500 - 5500 cal BC) sites in the Danube Gorges (the Danube stretch between present-day Serbia and Romania) and is corroborated by archaeozoological, iconological and archaeological evidence, this important aspect has received less attention in the study of surrounding areas. The issue of determining the role of fishing is particularly relevant for the understanding of transitions from foraging to fish producing economies in the North-Central Balkans, the latter commonly associated with the Starčevo-Körös-Criş cultural complex (c. 8000 - 5500 cal BC). Existing data on isotopic dietary signatures of human remains from Early Neolithic Starčevo-Körös-Criş sites signal a more terrestrial diet (Whittle et al. 2002; 2009), however archaeozoological data from several Körös sites in Hungary (BarótiCseke 2012) suggest that the role of fishing, in addition to being obscured by inadequate recovery techniques, would have varied greatly depending on site location and other socio-economic factors. In this paper, we present and discuss the results of the analysis of fish remains from the eponymous, Early Neolithic site of Starčevo-Grad in Serbia. The site is located on the former bank of the Danube at the edge of its floodplain, little over a 100 km upstream from the Danube Gorges as the crow flies. The faunal remains collected over the course of 1932 and 1968-1970 excavation campaigns (originating from both domestic and wild animals, waterfowl and fishes) were previously published by Clason (1988), and are indicative of a both stock-breeding and a hunting/fishing economy. The fish remains, albeit few, were collected mostly by hand, and the role of fishing was probably more substantial. The occurrence of large fish hooks and fishing net weights speak in favour of such hypothesis, as well as the environment of the site, which was located in the very proximity of the river. In addition to the re-analysis of the remains from older excavations of Starčevo-Grad, our study also included the analysis of fish remains collected during 2003-2008 excavation campaigns. The aim of this paper, as well as future analyses of Early Neolithic faunal assemblages is to problematize the presumed dichotomy between Mesolithic and Early Neolithic subsistence strategies and to assess the role of fishing at the advent of food producing economies in the Central Balkans.

**TH1-20 Abstract 03**

**Comfortable fishes in Mesolithic western Norway**

**Author:** Prof. Bergsvik, Knut Andreas, University of Bergen, Bergen, Norway (Presenting author)

**Co-author(s):** Ritchie, Kenneth, Zentrum für Baltische und Skandinavische Archäologie, Schleswig, Germany

**Keywords:** Fishbones, Fishing gear, Settlement patterns

**Presentation Preference:** Oral

In late Mesolithic western Norway fishing stood for a major factor in the subsistence. The large majority of the residential sites are situated close to the shoreline, near good fishing grounds. Line-sinkers of soapstone occur frequently at these sites, and at some of them - where conditions for preservation for faunal materials are favourable - fishhooks of bone are found, and also
large amounts for fish bones. The osteological analyses show that the main species caught belong to the cod family (Gadidae) of relatively small sizes. In spite of a strong marine focus, these populations were not deep-sea operators. Fishing was instead carried out in their “comfort zone” in the protected fjords, straits and archipelagos along the western coast.

TH1-20 Abstract 04
Written sources as a way of understanding Danish prehistoric eel fishing methods
Author - Researcher Pedersen, Lisbeth, Independent, Kalundborg, Denmark (Presenting author)
Keywords: diachronous studies, eel fishing, human diet, regional and chronological development of fishing
Presentation Preference - Oral
Eels constitute a significant source of essential nutrients in the human diet. Over time, people around the world have developed numerous different methods of obtaining vital nutritional elements from aquatic environments. Eels, with their substantial content of fatty acids, vitamins, and, not least, fat, are an example of an aquatic food source that has been prized in many parts of the world for millennia. Numerous different fishing methods have been employed, founded on observations of the mystical behaviour of this fish. Its remarkable biology did not begin to be understood until the 20th century and there are still some unanswered questions. The fishing methods and equipment required to catch eels, both on a daily basis and in large quantities as stored provisions, were developed on the basis of experience and oral traditions, handed down from generation to generation. In a Danish context, written sources such as old texts and ethnological evidence can provide information that is useful in interpreting prehistoric eel-fishing strategies. Ethno-historical sources support evidence from studies of prehistoric wood suggesting that Stone Age people systematically managed the surrounding forest to obtain building materials of an appropriate quality and in the required quantities for their fishing structures in the sea.

Archaeological and archaeological data show that eels have been part of Danish food culture for the past 8000 years. In 1988 and 1990, remains of fishing structures dating back between 4500 and 7000 years were investigated. These archaeological structures were interpreted as so-called åleger – eel weirs, which the fisher-farmers of historical times built on the coast and out into the sea. They were used to catch the shoals of silver eels which, then as now, migrated each year from Baltic and Danish waters to the Sargasso Sea to mate and reproduce. This interpretation provided grounds for examining a number of different ethno-historical source categories from Danish museums and archives in order to assess information on construction methods, catches, and catches and marine biology in relation to the corresponding prehistoric structures. According to a Danish adage, it’s hard to catch an eel by its tail. This paper presents diachronous Danish examples showing how the skill, craftsmanship and know-how of the Stone Age fishers, in relation to the manipulation of both marine and terrestrial resources, were developed on catching the “tricky” eel with its high nutritional value, were apparently passed down from generation to generation until the demise of this activity in the mid-20th century. But everything has its price! Some Danish sources reveal how people risked both life and limb when fishing from stationary structures during autumn and winter storms. Still eels are a much sought-after and highly prestigious food source in many parts of the world. Danish eel stories, from museums and archives, reveal how the people of Denmark have, since the Stone Age, employed special methods, ranging from almost childishly simple tools to complicated wooden structures stretching out into the sea, to ensure that the strong eel ended up making a valuable contribution to human nutrition.

TH1-20 Abstract 05
Stone Age Spear fishing in the Baltic Sea region
Author - Dr. Klöß, Stefanie, Archäologisches Landesamt Schleswig-Holstein, Schleswig, Germany (Presenting author)
Keywords: Baltic Sea, fishing, Mesolithic
Presentation Preference - Oral
A common fishing tool of Final Mesolithic (Eisbäye) and Early Neolithic coastal sites at the Baltic Sea is a specialised spear. This spear for active fishing was constructed with two wooden leister prongs and a bone point in the middle, which were very well preserved, were excavated during the years 1996 to 2008. Archaeological and dendrochronological investigation of leister prongs will be presented in this talk supplemented by ethnographic examples and ancient finds of other periods. The fish bone data and ethnographic comparison points to the fact that eel (Anguilla anguilla) was caught with spear. Although very similar iron tools are known from 19-20th century from the Baltic Sea region historic development of this fishing gear has large gaps in the archaeological sources.

The production method of Eisbäye and Early Neolithic leister prongs could be reconstructed with the help of several unfinished tools that show characteristic cutting marks at the tips and the shafts. The tips of the finished fishing gear can either be elongated and pointed, or short and rounded. These differences are most likely due to their respective use on muddy or hard grounds. Moreover, traces of usage such as cracks, splitting, and roughening at the tips are frequently documented. The examination of wooden leister prongs shows that special wood types were preferred. These particularly include the woods of fruit trees (Malusaeae) and red dogwood (Cornus sanguinea), as well as the flexible and common hazel (Corylus avellanea). A few other types were used very rarely. The proportions of material used show regional and chronological differences, as certainly as a result of which resources were available.

Spear fishing is one of the practised fishing methods during Final Mesolithic and Early Neolithic in the Baltic Sea region. Very high find density of wooden leister prongs at specialised coastal hunting and fishing camp sites shows the intensive use of spears especially during the winter month. Thus, spear fishing of eel plays an important role in the subsistence system of Stone Age Hunter-Fisher-Gatherer groups in the Baltic Sea region.

TH1-20 Abstract 06
A Boreal Mesolithic wooden leister prong from Sise, Ventspils County, western Latvia
Author - Luebke, Harald, ZBSA Schloss Gottorf, Schleswig, Germany (Presenting author)
Co-author(s) - Klöß, Stefanie, Institute of Pre- and Protohistoric Archaeology, Christian-Albrechts-University, Kiel, Germany
Keywords: Marinenachweise, leister prongs, wooden spear, Mesolithic
Presentation Preference - Oral
The Stone Age site Sise is situated in the valley of the Rjeva Ula on the Kurzeme Peninsula in western Latvia. Next to the site is the former river mouth, where during the transgressive phases of the Ancylus Lake and Littonia Sea it entered a large bay. In the subsequent regressive phases the bay was transformed into lagoons that subsequently developed into freshwater lakes and peatlands. Archaeological finds recovered since the 1920s demonstrate the importance of this landscape for prehistoric hunter-fisher-gatherer groups.

New research in this area started in 2010 in close cooperation with a local amateur archaeologist, resulting in a large collection of Mesolithic and Early Neolithic bone and antler tools. Excavation on the island in 2012 has brought to light wooden objects from stratified context as well: part of an eel trap and a tool handle with preserved resin showing imprints of a binding material, which are dated to c. 8200–8600 BC. The wooden leister prong from Sise is the oldest find of this tool type up to now in the Baltic region. The present paper will give an overview of the chronology and distribution of this tool type in the Baltic region.

TH1-20 Abstract 07
Fishing equipment of the late sedentary hunters of Russian Plain
Author - Dr. Kashina, Ekaterina, State Historical Museum, Moscow, Russian Federation (Presenting author)
Keywords: final Stone Age, fishing gear, North-East Europe
Presentation Preference - Oral
State Historical Museum, Moscow, obtains the largest collections of Stone Age artifacts in Russia, among them occasional finds, old and modern excavation materials are present. I will review different groups of items concerning sedentary hunters’ fishing gear dated IV-VIII millennium BC, such as dugouts/roboats, bark/skin canoes (studied by clay sculpture), wooden paddles (large series preserved in peat bog layers), stone anchors, special bone points, fish hooks, fishing nets (studied by multiple imprints on ceramic vessels inner surface) and small sculptures of fish species (made of bone and flint). The main conclusions and problems of fishing gear investigation are discussed.

TH1-20 Abstract 08
Wood use and woodland management at Šventoji fisheries, SE Baltic, 3200-1000 cal BC
Author - Kastula, Pesaekas, Vilnius university, Faculty of history, Vilnius, Lithuania (Presenting author)
Co-author(s) - Piličiauskas, Gytis, Lithuanian Institute of History, Vilnius, Lithuania
Keywords: tree species, wooded, woodland
Presentation Preference - Oral
Šventoji Subneolithic – Bronze age (4000-500 cal BC) archaeological complex is well known for the extensive excavations that took place during the second half of the 20th century and the excellent preservation of some perishable organic materials. During the last decade of excavations at Šventoji (2004-2010), new sites located in abandoned Bronze Age (2000-500 cal BC) river channels and containing rich cultural layers with a wide range of artifacts and wooden fishing structures were added to the wetland archaeological complex. Until recently tree species of wooden artefacts found during the excavations at Šventoji were rarely identified, and then using mostly macroscopic evaluation. Fragmental data, in some cases collected using unreliable...
methods, does not allow to get a full view of the wood use and woodland management strategies adopted by prehistoric fishers.

During the last few years this topic received more attention. All wooden finds from recent excavations at Šventoji archaeological complex are analyzed using macroscopic and micromorphological examination of wooden artifacts unearthed at Šventoji in 2014 and 2015.

TH1-20 Abstract 09

Subneolithic fishing in the southeastern Baltic in the light of recent research at Šventoji 43

Author - Gaisčiuskas, Lukas, Vilnius University, Vilnius, Lithuania (Presenting author)

Co-author(s) - Dr. Piličiauskas, Gytis, Lithuanian Institute of History, Vilnius, Lithuania

Keywords: Subneolithic, fishing, Subneolithic presentation preference - Oral

The prehistoric complex of Šventoji in SE Baltic is well known for its multiple archaeological sites, which range in timespan from Subneolithic to the Bronze Age (4000-500 cal BC). Surveys and excavations carried out there in 2013 and 2014 led to the discovery of several new sites, among them a Subneolithic site Šventoji 43, which is one of the earliest sites from Šventoji and includes a dwelling zone dated to 3900-3700 cal BC. The goal of the present paper is to present the results of the excavations at Šventoji 43 and also the analysis of the fish bones recovered at the site.

Šventoji 43 is distinguished from later Subneolithic sites of Šventoji by the presence of blades and microliths in the lithic assemblage and pottery which bears close resemblance to the typical Comb Ware. It is also evident that amber was worked directly on the site and shaped into ornaments, whose forms are identical to those found at Comb Ware sites in the Eastern Baltic. Archaeological wood has already perished, but a great quantity of both burned and unburned, mostly very fragmented bone was recovered, amounting to c. 26,000 fragments. 1436 fragments of bone belonging to fish, seal and forest mammals were identified. The greatest number of identified fragments come from seals among mammals while the majority of fish bones belong to pike and zander. Fish bone analysis shows that the main activity on site was fishing of pike and zander in the lagoonal lake during the spring spawn. The goal of this paper is to present the results of the excavations at Šventoji 43 and also the analysis of the fish bones recovered at the site. Our knowledge of Roman fishing is based on a wide range of written and pictorial as well as archaeological sources. The study of the latter came into academic focus in the past few years (cf. International Workshop “NETS AND FISHING GEAR IN CLASSICAL ANTIQUITY: A FIRST APPROACH”, University of Cadiz 2007). All sources teach us about techniques and fish consumption as well as fish processing to manufacture the famous garum. Ancient authors (cf. Oppian’s Haleutica) and some rare inscriptions give us insights in the organisation and socio-economic structures behind the Roman fishing industries. Most of these sources originate from the Mediterranean.

In contrast, almost nothing is known about freshwater fishing in the north-western provinces. Even though fishing tools as hooks and net needles were regularly found at Roman sites (cf. Windisch- Violpich) and some inscriptions (cf. Biberach/CH, Nittenbach/CH, Kempenich/CH etc.). The Roman poet Ausonius also reported that Romans fished with fishing rods and nets in the Moselle. Thus it must be assumed that fresh water fishing was more common than it seems.

Following this assumption, the paper provides a first comprehensive and interdisciplinary presentation of freshwater fishing during Roman times on the Swiss Plateau. This study area is chosen because of its diversified landscape with lakes, rivers and streams and its good state of research; find assemblages of several ancient cities, vicl, villa rusticae and rural settlements have been widely published and discussed.

This paper focuses on the investigation of fishing equipment and fish remains. Data will be compiled from the secondary literature. This quantitative approach will also consider their archaeological context to gain knowledge about the spatial and chronological distribution of the objects. This allows me to draw conclusions in terms of the organisation, nature, dynamic and range of fishing and fish consumption in the north-western provinces.

TH1-20 Abstract 10

Backing up the frail evidence of the utilisation of Atlantic salmon in Mid-Holocene Finland

Author - Köivistö, Satu, University of Helsinki / National Board of Antiquities, Espoo, Finland (Presenting author)

Co-author(s) - Nuurminen, Katarina, University of Helsinki, Helsinki, Finland

Keywords: ethnography, prehistoric fishing, salmon presentation preference - Oral

The archaeological evidence confirming the significance of salmon fishing in prehistoric Finland is weak. Based on historic sources, mass-harvesting of migratory species, such as Atlantic salmon (Salmo salar) and whitefish (Coregonus lavaretus) formed the basis of the northwest coast river economy far into the 20th century. Consequently, the prehistoric origin of salmon fishing in the area is being perceived as a self-evident fact, even though the direct osteological and artefactual evidence confirming this is scarce. The settlement pattern, site locations and technological level achieved in fishing among the Mid-Holocene (c. 3500–2000 BC) populations of coastal northern Ostrobothnia suggest focusing on mass-harvesting facilities, utilising the regular migrations of specific species, and investing in storing techniques. Application of ethnographic, historic and anthropological data collected among the Atlantic (Salmo) and Pacific (Oncorhynchus) salmon fishing communities may provide some additional information to be used in archaeological reasoning and interpretation. Analogous data may also provide important tools for understanding the fragmentary and biased archaeological record and open up new avenues for exploring prehistoric fishing.

TH1-20 Abstract 11

How much is the Fish? Roman Fishing on the Swiss Plateau

Author - Koch, Permin, University of Zurich / Kantonarchäologie St. Gallen, Zürich (Presenting author)

Co-author(s) - Dr. Weski, Timm, Retired, Munich, Germany (Presenting author)

Keywords: economy, ethnographic study, Fishing presentation preference - Oral

The Steinhuder Meer is a lake of 30 sq. km northwest of Hannover in Northern Germany. Mesolithic artifacts indicate that people made use of the resources of the lake since that time. As it was an economically underdeveloped area at that time, the two bordering states were a matter of constant quarrels in the Middle Ages and Early Modern Times. In the end the inhabitants of the village of Steinhude won the conflict. Most of the fish was caught with the help of fish traps, a method which together with the traditional boats, known as Torfkähne, is still used today. To gain the necessary raw material for the nets flax was grown by the fishermen who were farmers as well, because they could not make their living from fishing alone. The surplus of flax was used for cloth making which was the start of a linen industry lasting to this very day. In addition the boats were used for transporting past the lake and for cutting young reed or forage or grass from floating meadows. Traditionally the fishing rights were leased to individual fishermen. This changed around 1900 when the whole lake was leased to a single person. He introduced a type of vessel (Angelkahn) which derived from Havel region and new methods like line fishing and the use of a large seine net. At the same time the railways reached the lake and tourists came in. In the beginning, before special boats for tourists were constructed, Torfkähne were also used for carrying day-trippers. They were fond of smoked eel which was not only sold in the village of Steinhude, but later also at the market in Hannover. In fact the consumption of eel was for many people a reason to visit the lake. Because of this economic success only eels were caught and the rest of the catch was dumped back into the lake. This process lasts until today though most of the eels are now imported from other regions. Perhaps this development can to develop patterns for low income coastal people in Latin America. Because of this economic success only eels were caught and the rest of the catch was dumped back into the lake. This process lasts until today though most of the eels are now imported from other regions. Perhaps this development can to develop patterns for low income coastal people in Latin America.

Pre-Columbian fish traps as source of livelihood for low income coastal people in Latin America

Author - Dr. Wessl, Timm, Retired, Munich, Germany (Presenting author)

Keywords: economy, ethnographic study, Fishing presentation preference - Oral

The Steinhuder Meer is a lake of 30 sq. km northwest of Hannover in Northern Germany. Mesolithic artifacts indicate that people made use of the resources of the lake since that time. As it was an economically underdeveloped area at that time, the two bordering states were a matter of constant quarrels in the Middle Ages and Early Modern Times. In the end the inhabitants of the village of Steinhude won the conflict. Most of the fish was caught with the help of fish traps, a method which together with the traditional boats, known as Torfkähne, is still used today. To gain the necessary raw material for the nets flax was grown by the fishermen who were farmers as well, because they could not make their living from fishing alone. The surplus of flax was used for cloth making which was the start of a linen industry lasting to this very day. In addition the boats were used for transporting past the lake and for cutting young reed or forage or grass from floating meadows. Traditionally the fishing rights were leased to individual fishermen. This changed around 1900 when the whole lake was leased to a single person. He introduced a type of vessel (Angelkahn) which derived from Havel region and new methods like line fishing and the use of a large seine net. At the same time the railways reached the lake and tourists came in. In the beginning, before special boats for tourists were constructed, Torfkähne were also used for carrying day-trippers. They were fond of smoked eel which was not only sold in the village of Steinhude, but later also at the market in Hannover. In fact the consumption of eel was for many people a reason to visit the lake. Because of this economic success only eels were caught and the rest of the catch was dumped back into the lake. This process lasts until today though most of the eels are now imported from other regions. Perhaps this development can to develop patterns for low income coastal people in Latin America. Because of this economic success only eels were caught and the rest of the catch was dumped back into the lake. This process lasts until today though most of the eels are now imported from other regions. Perhaps this development can to develop patterns for low income coastal people in Latin America.
AFTER THE FLAMES.
NEW APPROACHES TO THE STUDY OF THE MEDIEVAL SITES
WITH FUNERAL CREMATIONS IN NORTHERN
AND EASTERN EUROPE

Friday, 2 September 2016, 09:00-13:00
Faculty of Philology, Room SF2

Author - Dobrovolskaya, Maria, Institute of Archaeology, Moscow, Russian Federation (Presenting author)
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Keywords: funeral cremation, ideologies of past societies, Medieval Northern and Eastern Europe
Presentation Preference - Regular session

The funeral rites involving cremation of the body were particularly prevalent in Eastern and Northern Europe in the Viking Period and the Middle Ages. Our knowledge about burial developed with the improvement of the methods of field and laboratory studies. The term „cremation” unites funeral rites with various forms of cremated bone remains depositions. We need to consider different aspects of the archaeological record to understand the cultural traditions associated with particular forms of funerary cremation. Here are some of them:

• The territorial setting of the cemetery in the context of settlements, economic zones, religious/mythological spaces, and natural landscape.
• The forms of placement of the cremated bones in the grave (urn, pit, surface, etc.).
• The number of individuals in the grave, and their age and sex characteristics.
• The presence of cremated animal bones.
• The completeness of the cremated human remains.

It is thus possible to study the variability of cremation parameters and their spread over large territories, and to assume the ideas and worldviews of the people who practiced this burial rite. Different variants of cremation funeral rites have been distributed in Eastern and Northern Europe. For example, one of the variants of burial which became widespread in Medieval North-eastern Russia is the burial of small amounts of cremated human and animal remains in the surface layers of the ground. The special importance of the East Baltic region, in particular Lithuania, in the context European burial rites is the latest precisely documented cremations. The new body of data obtained from recent years’ excavations and application of new methods in both field and laboratory archaeology seems to promise productive discussion. The session expects presentations discussing new methodological and theoretical approaches to cremation burial, and cremation rites as unveiling the ideologies of past societies.

TH1-21 Abstract 01
Cremation graves of the Western Balts in the Late Iron Age. Comparative approach

Author - Dr. Shiroukhov, Roman, Vilnius university, Vilnius, Lithuania (Presenting author)
Keywords: Aschenplätze, Collective cremation graves, Prussians, Curonians, Scalvians
Presentation Preference - Oral

All the Western Balts tribes have been connected by the burial rite of cremation since the Viking Age and till the intensification of Baltic Crusades. Altogether with language features and therefore similarities of culture, cremation has connected Prussians, Curonians, Scalvians, Galindians and Jotvingians in the 10-13th centuries. Despite this each Western Balts area had its own form of cremation graves, often not typical to their neighbors. For example, so named “double layer” cremation graves of Prussians, when cremated deceased was buried in the upper part of the pit above the unburned horse, were practiced in the region of Sambia and Natangia almost unchanged from the 9th to the 10th centuries. For the other point southern Curonians began to burn their dead on a mass scale only in the 9-10th centuries. So, the development of Scalvian and Curonian burial rites looks more dynamic in a comparison to Prussians. Investigating a phenomena of Western Balts collective cremation graves it was concluded, that most of Curonian cremation graves of several individuals were erected in huge pits probably at one moment and belonged to the members of warrior elite or some influential clans and their relatives. In contrast to Curonian collective cremation, Sambian cemeteries Alykja-3, Kihny and Kl. Kaup represent „Aschenplätze” as certain areas of individual double layer cremations erected very close to each other, and not at once. Their stratigraphy is very different from Curonian, Scalvian or Galindian “collective” cremation graves. Each grave literally has its
Interpreting the Archaeological Record

in the North-West of Eastern Europe

Cremation is known as a dominating funeral ritual in the Upper Volga in the IX-X-th cc, however present knowledge of cremation practices in this region is based mainly on the documentation of the burial mounds excavated in the 1940-1980-ies and in the earlier times. Recent investigations in Shekshovo burial site not far from Suzdal, produced with the implementation of modern excavation techniques (2011-2015), opened new research perspective, revealing important aspects of cremation ritual and transition from cremation to inhumation after conversion to Christianity. Field investigations in Shekshovo produced evidence of coexistence of the two forms of funeral rites with cremations. According to the first tradition, cremated skeletal remains have been placed in the mounds. Another tradition involves dispersing human and animal cremated bones on the surface or in the ground pits. Both have coexisted in the X-th c. Recording of superficial cremations with small fragments of burned bones (from five to fifteen millimeters in diameter) and fragments of grave goods (glass beads, metal ornaments, coins) destroyed by the fire in Shekshovo reveals special features of this funeral ritual. First, cremated remains were not grouped in the individual burials, but placed on a broad area forming common field with the burned ashes of the humans (men, women and children) as well as the animals. Second, the weight of cremated remains, which can be regarded as belonging to one individual is very small (about tens of grams). Therefore, most of the cremated remains of the skeletons were not interred on the cemetery. These features indicate special funeral practice, which was earlier recorded in Northern Russia, but proves to have much wider geographical spread including the center of the Volga-Oka region. Find material associated with the cremations (melted objects of silver, non-ferrous metal and glass, mostly dress decoration) includes a female burial dated to early medieval times and to Votla-Fennic and Baltic cultural traditions. C-14 dating and the study of the artifacts indicate that cremations in Shekshovo were performed in the X-th c. with the culmination in its second half. Infrahumanations were introduced in the end of X-th c and there is no evidence that the practice of cremation had continued in the X-th c. Laboratory analysis of cremated remains allows to discuss sex-age characteristics of the group from Shekshovo. The data on the ratio of strontium isotopes (87Sr/86Sr) in the cremated remains may be used for the reconstruction the level of mobility of the population and for the identification of individuals newly arrived from other areas. Field research in Shekshovo proves that burial sites with superficial cremations could survive on the land plots after intensive long-term agrarian cultivation. Discovery of these sites becomes realistic with the introduction of the more advanced approaches to the excavations and processing of osteological remains.

recognized. The human bones and animal bones are present together constantly. In some burials, animal bones predominate. During studies it was determined the sex, the age of the burial, the temperature of burning. In some cases, it was possible to detect somatotraumas. 

Strontium isotope analysis taken as well. According to the results of our research, we can discuss two hypotheses. The first one is that the population of Moscow region was unchange from the early Iron Age until the end of the first millennium AD. According to another hypothesis, the population could change several times during the second half of the first millennium AD. We discuss pro and contra.

However, a small number of cremated burials in the Old Russian barrows of the XIth beginning of the XIIth centuries were excavated in the west part of Novgorod land. This group of burials has never been the subject of a special study for archaeologists. In the field reports and publications they have been interpreted as “a relic of paganism” without any arguments.

Micro-topography analysis of the cemeteries shows that such mounds with the cremated remains were not separated from the other mounds and located in the early part of the burial groups. The mounds with cremations and the mounds with inhumations of the same period are identical externally and internally. Simultaneously the cremated remains are quite different from the cremations of earlier times (for example, the Culture of Long mounds, Sopka culture, etc.) in size and in the degree of burning. The remains were scattered on the bottom of the burial pits, their size and shape are very similar to the inhumation graves. Finds (knives, iron weapon’s heads, coins) are rare in the analysed group and located like in inhumation graves. The subjects typical for female costume have not been found yet. It is important to emphasise that the found things have no trace of a fire.

Mentioned peculiarities give us an opportunity to clarify why Christian burial canan was disrupted. Probably the cremation was the only possible way to deliver the body to the family cemetery, where the deceased could receive a new Christian rite according to relative’s opinion. Perhaps the death came far away from home in a military campaign, hunting expedition or commercial travels. In this case other participants of expedition (relatives and/or neighbors, people who knew the deceased/victim well) felt obliged to bring the body to his relatives for burial at home.

**TH1-21 Abstract 06**

Folk from “Lodges of the dead” (on the burial sites of the Russian North in first millennium AD)

**Author** - Kleshechkina, Ekaterina, Institute of Archaeology of Russian Sciences, Moscow, Russian Federation (Presenting author)

**Keywords:** Lodges of dead, prehistorical approaches, cremation

**Presentation Preference** - Oral

“Lodges of dead” – is the special type of burial sites which was typical for the Mologa-Sheksna interfluence and other parts of the Russian North and central region of the European Russia. This name comes from the special wooden structures (small houses - lodges) with materials of the funeral cremations as well as ash, pieces of carvings, fragments of bronzes, iron, glass, bone grave goods. The tradition of this type sites stretches for many centuries, from the first cc. BC to the end of the first millennium AD.

These archaeological sites of the Mologa-Sheksna interfluve (western part of the Vologda district) were excavated by A.N. Bashenkin (1) during 80-90 years of XX c. The author did not formulate the clear opinion about the ethnocultural background of these sites (2). Skeletal materials from “lodges of dead” of this region were not studied till nowadays.

The report is the first summary of the characteristics of the cremated remains from these burial structures. Burned bones from burial sites Chagoda 1, Pugino, Kurevanikha XII, Kurevanikha XVI were used in this research. Materials were examined with the microwavе. All cremated fragments were verified by color, weight, number, high temperature cracks and deformations. Clear anatomatically fragments were used to determine the sex and age of the individuals, and to detect the presence of animals. All clear anatomatical fragments were recorded in archaeological plans.

Analyzing the results of the research, every “lodge of dead” to the remains of about 7-10 individuals (males, females, subadults). The fragments of the treated animal bones were detected as well. 87Sr/86Sr bone ratio indicates the presence of the individuals who lived on the different territories. Their remains were deposited inside burial structure (“lodge of dead”) together with the other cremated materials which was possible to identify the migrants. The last decade of the life of these humans took place in the different geological environments (3).

Comparative analysis of the regional sites highlighted the main features of a funeral ceremony: the burning of dead bodies on the funeral pyre outside the cemetery; partial deposition of burned bones together with charcoal, ash, melted grave goods. There is no individual burial space inside the “lodge of dead”. This structure includes all the individuals who were buried at different times together.

**Bibliography:**


**TH1-21 Abstract 07**

Medieval cremations of Novgorod Land: Christians or Pagans?

**Author** - Soboleva, Vladimirov, St-Petersburg State University, St-Petersburg, Russian Federation (Presenting author)

**Keywords:** Christian burial canan, cremation and inhumation graves, Novgorod Land, Old Russia

**Presentation Preference** - Oral

The study of funerary monuments of the Novgorod land was started in the middle of the XIX century and continues to this day. In total, about 10,000 different types of burial constructions were excavated. The investigations demonstrated that in the X-XV century throughout the Novgorod land cremation prevailed. The adoption of Christianity at the end of the XIX century has become the most important factor in changing the burial rites of medieval population. The first burials according to the new Christian rites (inhumations beneath barrows) have been dated by the middle of the XIX century. Since that time the Christian funeral rites certainly began to dominate in the Novgorod land. Details of burials and structures could be different, but the transition from cremation to inhumation spread everywhere.

**TH1-21 Abstract 08**

Underwater burial sites of the 14th century: Kernave case

**Author** - Dr. Velius, Gintautas, Vilnius University, Vilnius, Lithuania (Presenting author)

**Keywords:** burial tradition, cremation, underwater graves

**Presentation Preference** - Oral

At least three underwater burial sites with cremated graves from to the 14th century have been investigated in Eastern Lithuania. In recent years, the cremation graves were discovered close to Kernave town of the 13-14th centuries. In the dried stream watercourse about 13 kg of cremated human and animal bones, pottery and metal artifacts from the 14th century were discovered.

Burials in the water have received various scientific interpretations. The report provides the archaeological research data analysis of Kernave burial site and reveals the relation of this object to contemporaneous town. The essential question - whether the burial tradition was a long - time tradition or was it only the consequence of important historical events? In this context, the attention should be drawn to the fact of Kernave being reached precisely in the second half of 14th century by the largest forces of German Order and during the attacks of 1365 and 1390 the town was left in ruins. Furthermore, precisely at that time the “black death” spread throughout Europe and perhaps plague could reach Kernave too.

**Bibliography:**


**TH1-21 Abstract 09**

Urn Cremation in the Southeast Baltics in the late Roman period.

**Author** - Dr. hab. Masykova, Anna, Institute of Archaeology, Russian Academy of Sciences, Moscow, Russian Federation (Presenting author)

**Keywords:** late Roman period, Southeast Baltics, urn cremation

**Presentation Preference** - Poster

The cremation was the prevalent burial rite since Roman times and early Middle Ages in Western Baltas(4). In this regard it should be noted that the development of new approaches to the study of cremation urn particularly relevant. A lot of new burial sites opened in the second half of the last century, but they have not been studied with the bioarchaeological approaches.

New cemeteries with inhumations and cremations of the Roman period (Baltian-National archaeological culture) discovered by Sambian expedition Institute of Archaeology in recent years. Most of the vessels were disturbed, so we cannot
reconstruct the sequence of packing urns by bones and a grave goods. Often fragments of cremated bones are located out of vessels (above, from the side, spread over the site). Bioarchaeological approaches contribute to understand the causes of these locations (site, taphonomic changes and so forth.)

Romanov-Pugachev pond – one of the monuments, which was opened recently in the Zelentograd district of Kaliningrad region (East Prussia). Some graves disturbed by robbers, but one urn burial with cremation has been intact. The vessel was filled with heavy clay soil. Recording and sorting out the urn contents took place in the laboratory. Contents urn studied in layers, taking into account the depth of the layer. As a result, it was revealed that the burned bone fragments were placed in an urn without anatomical order. Weight cremated bones indicates that the cremated fragments of the funeral pyre was collected selectively, but not completely. The most parts of cremeation are located in two layers of the urn: at the bottom and in the middle. Objects of iron and iron weapon (ax, spear, umbo and other fragments) tightly putted above of each of these two clusters of the crematedbones.

This methodological approach of the study of the contents of urn in the laboratory enables to reconstruct the complex and multi-stage procedure for the funeral rite. Also, thanks to this method, we can discuss some of the important characteristics as:

- The temperature and time of pyre burning;
- The presence/absence of single and double (collective) burials; The age and sex of the individuals from the burials with weapons;
- Grave goods burned on a pyre and those that have been put into the urn without burning. Further rise of data will contribute to estimate the interaction of local and outside cultural influences and migrations on the funerary traditions of the inhabitants of the region of Sambian peninsula.

1 The study was supported by the RFBR, № 16-06-00058.

TH1-21 Abstract 10

“*The largest cremation*” of the burial ground Schurovo: typical or exclusive?

**Author** - Svirkina, Moscow, Russian Federation (Presenting author)

**Co-author(s)** - Syrovatko, A.S., Kolomna archeological center, Kolomna, Russian Federation

**Keywords:** burial ground, cremation, Middle Oka

**Presentation Preference - Poster**

Multivariate of funeral rites of the Late Roman period - the Early Middle Ages in the central part of European Russia (Moscow region) are not studied in detail. A special place in this variety are the cremation. In particular, the burials differ in the way the localization of the burned bones (burned mound and burial ground). The batches of the burned bones may be scattered and compactly located. We consider all these variations, since they have a specific meaning and formal position in the funeral rites.

This report - the description of the unusual case of burial cremation of the first half of the 10th century. It comes out of the ordinary ones by “heavy weight” of all individual burials in the Middle Oka.

Schurovo archaeological site is located on the first terrace of the right bank of the Oka (the middle reaches of the river) near the Kolomna town. There are kurgans and ground graves with cremations on this site territory. Systematic excavations take place since 2001 by Kolomna archeological center expedition (A.S. Syrovatko)1. According to the dating of the grave goods the site existed from VI till X cc. Ground graves with cremation is more late type of burials and associate with IX-X cc. The batches of the burned bones may be scattered and compactly located. We consider all these variations, since they have a specific meaning and formal position in the funeral rites. The presence/absence of single and double (collective) burials; The age and sex of the individuals from the burials with weapons; Grave goods burned on a pyre and those that have been put into the urn without burning. Further rise of data will contribute to estimate the interaction of local and outside cultural influences and migrations on the funerary traditions of the inhabitants of the region of Sambian peninsula.

1 The study was supported by the RFBR, № 16-06-00058.

TH1-21 Abstract 11

Thermal or non thermal alterations on the human bones: the case study from the Gnezdovo (9-11 AD)

**Author** - Dr. Tatyana, Shvedchikova, Institute of Archaeology Russian Academy of Sciences, Moscow, Russian Federation (Presenting author)

**Co-author(s)** - Novikov, Vasily, ANO Historical-archaeological center Gnezdovo, Moscow, Russian Federation

**Keywords:** Gnezdovo settlement, cremation, human remains, taphonomy

**Presentation Preference - Poster**

Numerous post-depositional and post-burial agents affect and potentially alter skeletal material. Biochemical changes in soil surroundings in some cases has the same manifestations on the bones as fire influence. The difficulty to interpret and distinguish such agents also could be due to the unclear taphonomic situation. The case study from Gnezdovo settlement (9-11th cent. AD, Smolensk region, Russia) shows us the good example of application different approaches to solve the hazard of black stains appearance on the woman's skull found in the re-deposited burial in the trench 2 (excavations of 2012 season). Archaeological center Gnezdovo is the biggest complex of settlements and cemeteries of Viking age period in Europe. Classical description, microscopic investigation, X-ray fluorescence analysis of the bone material, soil analysis in the context of stratigraphy situation are applied. The complex approach led us to the question of elaborating the objective criteria in the similar cases. Also the C14 dating got from the named bone material helps us to indicate the cultural layers of the second half of 10th century and get a new information about the early period of the Gnezdovo settlement in 9th century.
MESOLITHIC DWELLING STRUCTURES: FROM METHODOLOGICAL APPROACHES TO ARCHAEOLOGICAL INTERPRETATION

THI-23

Thursday, 1 September 2016, 09:00-13:00
Faculty of History, Room 331

Author - Caçarras-Solana, David, University of Rennes 1, Rennes, France (Presenting author)
Co-author(s) - Marchand, Gérégio, CNRS/University of Rennes 1, Rennes, France
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Keywords: Mesolithic, Settlements, Spatial analysis

Presentation Preference - Regular session

The study of Mesolithic settlements is a key issue to understanding the articulation of a social and economical system that lasted for several millennia and its collapse. Analyzing the spatial organization of settlements increases our knowledge on activity areas, subsistence strategies, seasonality of occupations and social organization. One of the most informative aspects is the study of dwelling structures identified in the archaeological record as post holes, stakes, pits, walls, floors, hearths, etc. The interpretation of their functions often leads to heavy assumptions (mobility system, storage, social hierarchy). The passage of these archaeological facts to their interpretations is obviously a crucial phase of our work, we need closer monitoring.

Research on dwelling structures can be approached from a wide range of theoretical and methodological points of view, which in turn can provide heterogeneous perspectives of archaeological interpretation that lead to the enrichment of discussion and debates. The session aims to gather together presentations on dwelling structures from archaeological sites but also multidisciplinary research on the structures from multiple methodological perspectives (e.g. spatial analysis by GIS, lithic refitting, geoarchaeology, micromorphometry, geochemistry).

In this session we intend to discuss this crucial topic for the European Mesolithic, considering all geographical locations (coastal settlements located as well as inland sites) and all Mesolithic chronologies, to offer a very wide panel of the concepts, methods and technical means at the disposal of the archaeologists.

THI-23 Abstract 01

Social organization behind shell-middens: ethnoarchaeological experiences from Tierra del Fuego

Author - García-Piquer, Albert, Autonomous University of Barcelona, Barcelona, Spain (Presenting author)
Co-author(s) - Esterleć, Jordi, Autonomous University of Barcelona, Barcelona, Spain

Keywords: Ethnoarchaeology, Mesolithic, Shell-middens

Presentation Preference - Oral

Shell-midden sites have been used to support the existence of economic intensification and reliance on maritime resources and sedentism. The archaeological visibility of shell-middens and the good preservation of archaeological remains have led to a long tradition of research. Nevertheless, the stratigraphic analysis of shell-middens always carries specific problems, given their very heterogeneous nature and the successive post-depositional processes that may have occurred. Indeed, traditional methods and techniques of excavation as well as the character of undifferentiated palimpsests commonly attributed to shell-mounds, have reduced the advantages of good preservation of the archaeological record.

Since 1988, a Spanish/Argentinian team has been developing ethnoarchaeological projects in Tierra del Fuego (Argentina) with the objective of improving methodology and developing conceptual instruments in order to advance in the study of prehistoric hunter-gatherer societies. The archaeological sites on the coast of Tierra del Fuego archipelago are shell-middens corresponding to fisher-hunter-gatherer groups that intensively exploited the litoral resources. Thus, in the frame of these projects, we excavated two settlements of the eighteenth and nineteenth centuries Yamana people. Túnel-VIII and Lanashuaí, both located on the northern coast of the Beagle Channel.

The ethnographic record, including pictures, descriptions of shape, size and the discontinuous but repeated use of circular structures and patterns on an individual spatial level. However, lack of identified structures makes a continued discussion concerning identification of dwellings through their relation to lithic dispersal patterns important.

We have been able to distinguish fine deposition sub-units and to identify discrete periods of occupation time. There were different dynamics, activities distribution and management of space in apparently very similar sites. In Túnel-VIII site there were at least ten discrete re-occupations in different seasons, whereas in Lanashuaí only one (maximum two) long occupation period have been registered.

A shell-midden is thus not necessarily a homogenous block of sediments and the variability inside can be very significant of the economic and social system that produced it. Experimental ethnoarchaeology is a useful tool, providing guidelines for excavating and explaining similar archaeological sites around the world. For example, Mesolithic Atlantic Europe shell-middens have been described as residential or logistical based on their size and thickness, or on the amount of remains and sometimes considered sedentary settlements based in averaged samples. But similar shell-middens may be the result of different strategies of occupation. We need to develop specific methodology, maximize and adequate techniques of excavation in order to reconstruct the social organization behind the processes that formed each shell-midden.

THI-23 Abstract 02

Mesolithic dwelling Space in an interdisciplinary perspective

Author - Res. Associate Gjøn, Olie, Norwegian Maritime Museum, Oslo, Norway (Presenting author)

Keywords: Dwelling, Interdisciplinary, Mesolithic

Presentation Preference - Oral

This paper discusses the authors’ development of an empirically based approach for analysis of the Mesolithic use of dwelling space based on theory, concepts and data from mathematics/physics, experimental social psychology, social anthropology as well as archaeology. The underlying assumption is that the space of hunter-gather dwellings is organised in accordance with culture-specific patterns so that the general positions of the individuals in a specific culture reflect their age, sex and status.

One focus is the merging of theory from several disciplines into one theoretical context. Another is the involved disciplines’ reaction on such a merging.

THI-23 Abstract 03

Early Mesolithic site space in western Norway

Author - Dr. art. Lære, Arne Johan, Museum of archaeology, University of Stavanger, Stavanger, Norway (Presenting author)

Keywords: Dwellings, lithic dispersal patterns, Norwegian Early Mesolithic

Presentation Preference - Oral

It has been hypothesized that western Norwegian Early Mesolithic sites are characterized by a standard lithic tool inventory with a uniform spatial configuration of the lithic debris. Specific lithic dispersal patterns are associated with both dwellings and open air sites. The dwellings are mainly identified as tent rings of stone cobbles and with associated fireplaces and lithic debris.

These features have been suggested as indicative of the early Mesolithic way of life as mobile hunter-fishers being present in both coastal and mountain areas. Presumably the lithic dispersal patterns primarily seems to be the remains of activities performed by a single individual. But it also raises the apparent question concerning lithic tool sharing. Site evidence at the transition from Early to the Middle Mesolithic seems to indicate a change and different site pattern due to changes in the spatial configuration of activities related to the lithic debris.

Early Mesolithic sites in general, are small sites and among the few sites which it is realistically possible to analyse site structures and patterns on an individual spatial level. However, lack of identified structures makes a continued discussion concerning identification of dwellings through their relation to lithic dispersal patterns important.

More discrete site analyses are needed through a consideration of site characteristics, excavation methods and lithic technological, functional and spatial features, in order to analyse trends in Early Mesolithic site patterns. Aspects of this culture-historical development and methodological challenges will be discussed.

THI-23 Abstract 04

Little house on the shore: Understanding the dryland structures at Star Carr, UK

Author - Dr. Connelly, Chantal, University of Manchester, Manchester, United Kingdom (Presenting author)
Co-author(s) - Birchennell, J., University of Manchester, Manchester, United Kingdom
Co-author(s) - Knight, B., York University, York, United Kingdom
Co-author(s) - Little, A., York University, York, United Kingdom
Co-author(s) - Milner, N., York University, York, United Kingdom
Co-author(s) - Taylor, B., University of Chester, Chester, United Kingdom

Keywords: Dwelling, Interdisciplinary, Mesolithic

Presentation Preference - Oral

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During excavations at the early Mesolithic site of Star Carr, UK, between 2007 and 2015, three features were encountered. One of these was an unambiguous pit and post structure with the pit filled with large quantities of lithics and organic material. In 2014 what appears to have been a similar feature was discovered, though this had been partially truncated by previous excavations. Finally in 2014/2015, a series of post-holes were encountered, though many of these were ambiguous in an area that had been heavily affected by root action. In this paper we present results of post-excavation analysis of these features. Using refitting, use-wear and micromorphology, we investigate the nature of these structures, and their differing history of use and abandonment. Beyond this what do these structures and their relationship to adjacent debris tell us about the nature of dryland activities that complement the well-known wetland archaeology of the site.
TH1-23 Abstract 09
Can pits define a settlement?
One example from inland Iberia Mesolithic
Author - Gaspar, Rita, Porto, Portugal (Presenting author)
Co-author(s) - Campelo, Joana, Porto, Portugal
Co-author(s) - Defry, Clea, UNIRIO, Lisbon, Portugal
Co-author(s) - Martin Seijo, Maria, CIBIO-InBio, Porto, Portugal
Co-author(s) - Terez, Joao, CIBIO-InBio, Porto, Portugal
Presentation Preference - Oral

In the last years new discoveries regarding Early Holocene human occupations have been made in inland Iberia, namely in northeast Portugal. One particular site, Foz do Medal, will bring important contributions to the study of Mesolithic communities due to its well preserved records as well as to its location in the border of Spanish Meseta.

Foz do Medal has more than 60 pits within three Mesolithic phases, from the 8th to the 6th millennia cal. BC. In some Mesolithic phases pits appear associated to other types of structures, such as post holes, hearths and hut floors. Nevertheless pits dominate the settlement area. Its contents were analysed by a multidisciplinary team, revealing lithic industry, faunal and archaeobotanic remains. One pit presented a human burial.

Throughout Europe pits have been found in several Mesolithic sites and their interpretation has been a matter of debate. Interpretations range from storage structures to hunting traps.

Considering the amount of pits that were found and the interdisciplinary approach carried out in their investigation, Foz do Medal can be a very important site in such debate. Furthermore the excavation provided relevant data regarding subsistence strategies and the use of bothiotic and abiotic resources.

TH1-23 Abstract 10
Clues to recognize spatial organization and function of the Mesolithic camps from Polish Lowland
Author - Dr. Osipowicz, Grzegorz, Nicolaus Copernicus University/ Institute of Archaeology, Torun, Poland (Presenting author)
Keywords: Mesolithic, Poland, Spatial analysis
Presentation Preference - Oral

The presentation will discuss the results of the interdisciplinary and multi facetted studies, which were subjected to three Late Mesolithic camps from the area of central Poland: Sasięczno 4 and Ludowice 6 (eastern and western habitation). The studies included: soil, geomorphological and hydrological analysis of the sites area, archaeozoological and palynological analysis of the bones, palynology, AMS dating and multiinfrared analysis of stone artifacts, including: petrography, technology, refitting and use-wear study of all artefacts. Spatial analysis were carried out using primarily Kernel density and “Ring and Sector” methods, including: soil, geomorphological and hydrological analysis of the sites area, archaeozoological and palynological analysis of the bones, palynology, AMS dating and multithreaded analysis of stone artifacts, including: petrography, technology, refitting and use-wear study of all artefacts. Spatial analysis were carried out using primarily Kernel density and “Ring and Sector” methods, allowing to recognize the probable original function and use-wear study of all artefacts. Spatial analysis were carried out using primarily Kernel density and “Ring and Sector” methods.

Presentations range from storage structures to hunting traps.

TH1-24 Abstract 01
Introduction: studying evidence for weighing through the ages - problems and challenges
Author - Associate Prof. Rahmstorf, Lorentz, University of Copenhagen, Copenhagen S, Denmark (Presenting author)
Co-author(s) - Skalski, Tomasz, University of Wrocław, Wrocław, Poland
Co-author(s) - Dzbynski, Aleksander, University of Zurich, Zurich, Switzerland
Keywords: cognition, metrology, trade
Presentation Preference - Oral

We would like to invite all scholars to this workshop who analyse such issues by the study of archaeological remains.

The discipline of ancient metrology is generally considered to be a difficult subject and weighing equipment is often not sufficiently discussed in publications - if the evidence has indeed been recognised at all. One of the aims of this session is to promote such studies and to demonstrate its relevance for many key issues of the human past, among them cognition, trade and economic integration, mathematical conception and socio-economic organisation. The time is past due to disseminate the relevance of weights and measures, especially because the identification of such tools often allows for a considerable reinterpretation of the cultural context in which they appear.

We will highlight some of the problems and challenges we have to face when studying (potential) weights, scales or weight-regulated artefacts. Issues we will touch upon comprise the relation of weighing to metallurgy, abstraction, standardisation, metrology, trade and traders and even to the ancient perception and description of the world.

TH1-24 Abstract 02
Normative and behavioural aspects in Near Eastern weight systems: a Case study from Ebla (Syria)
Author - Dr. Ialomito, Nicola, Sapienza University of Rome, Roma, Italy (Presenting author)
Co-author(s) - Dr. Vacca, Agnese, Sapienza University of Rome, Roma, Italy
Co-author(s) - Prof. Peyronel, Luca, University IULM di Milano, Milan, Italy
Keywords: balance weights, Ebla, hoards
Presentation Preference - Oral

The material remains of past cultures are conceptualizations of their creators. Artefacts associated with the application of weight standards from prehistoric to the Middle Ages may be analysed in this way. Certainly, weights and scales facilitated trade and exchange, integrated different geographical spheres and cultures in economic terms and became in this way a medium in defining interpersonal and intergroup communication. Weighing is also closely connected the other kinds of measurements of concrete things as well as the conceptualization of numbers.

During this session we would like to raise the following topics:

- When emerged the concept of weighing and under which circumstances? How closely was it related to the increasing importance of metallurgy?
- Whether and to what extent weighing units were abstract concepts?
- Why were certain shapes of weights chosen and preferred in certain regions and periods?
- How were various weighing systems constructed and how were they transformed through time? Can we really define the origin and end of the use of specific weighing systems and units?
- What are the contextual associations of weighing equipment (scales and weights)? What does this tell us about the use of these tools and the social status of the users?
- Influenced weighing systems the perception and description of the world?

We would like to invite all scholars to this workshop who analyse such issues by the study of archaeological remains.
Interpreting the Archaeological Record

TH1-24 Abstract 03

Weight - highly abstract measure

Author: Dr. Siussara, Katarzyna, University of Gdańsk, Gdańsk, Poland (Presenting author)

Keywords: Central Europe, metal production, weight

Presentation Preference: Oral

Nowadays in most countries of the world we have one coherent metric system in which every phenomenon can be described using 7 base units. But even in not very remote past every unitald its own scope of references and one quantity could be measured using different units depending on physical state, purpose and other properties. Among other measures invented or negotiated the weight is the most abstract one. It is hard to point any natural equivalent that can be used as a comparative amount - e.g. feet, elbow length or the number of eyes, heads or fingers. Even if these units/numbers differ between people there is something like "the ideal model" - every man has 2 eyes, 1 head and 5 fingers in each extremity - except for some rare exceptions. Or it is possible to establish one benchmark, in which the majority of people fit into with their feet or elbow length. Other quantities were usually counted using proper container, in which the product was consumed or stored.

The earliest weight units seem to be connected solely with metal production. This particular activity - starting from ore acquisition through extraction, alloy preparing, up till the end-product - requires very specific knowledge and ability to abstract thinking taking into account that at every stage of this process the material has completely different properties. So in this meaning the beginning of the Bronze Age can be also perceived as a moment of emergence of the new, abstract unit - the weight.

However, when we consider what we can observe among metal objects, there are also comparible sizes and shapes. Wherfore we should consider whether this comparable weight was exactly the characteristic that the producer had meant to achieve or it was rather unplanned and unaware result of planned size and shape of the end-product. If the first thesis is true we should observe some, not necessarily metal, weight equivalent. In the Bronze Age Central Europe, the evidence for the existence of comparable weight units are scarce and disputable, though we can trace them in the Mediterranean World.

The main aim of the paper is to reconsider whether, to what extend, the idea of weight in Central Europe is connected with metal production itself. Or whether it is the product of highly organized communities (with well-developed and centralised markets), then adopted, without understanding its essence, by Central-European societies of the Bronze Age.
THI-24 Abstract 06

Metal ingots as a medium of exchange in the Bronze Age and the Iron Age

Author - Phil Gralak, Tomasz, Wrocław University, Wrocław, Poland (Presenting author)
Keywords: medium of exchange, metal ingots, trade
Presentation Preference - Oral

Metal ingots constituted a long-lasting phenomenon that occurred from the beginning of the Bronze Age to the late Middle Ages. They appeared at the earliest in the Sichat culture in Central Europe. Specimens made of bronze are rib-shaped, while gold ones were made of spiral wires of 99.5% purity. In the era of the Umbri, complex longitudinal ingots of bronze and tin appeared. Sometimes they are combined with a sort of暴涨 constructions which facilitated their breaking. They were often found in contexts associated with metallurgy. In the Hallstatt period, objects of this type made from iron appeared. In the La Tène period, ingots of gold, silver or bronze, often broken, have been found together with chopped coins. Analogously finds date from the Roman period, the Migration period and the Middle Ages. From that time spiral wound ingots and coils of wire are also known. Silver ingots were most often medium of exchange in medieval Lithuania. It seems the reason for such a long use of ingots is their unique usability. They served as a source of raw material, yet remained bullion money. Their form facilitated their breaking up to in smaller pieces in order to achieve the proper weight. This method of their use facilitated relationships with communities using different weight measurement systems. They were also necessary, even if coins were available, in areas where political power was not able to guarantee their value.

THI-24 Abstract 07

Late Antique and Byzantine weights in the Mediterranean Area. The Glass weights

Author - Tobias, Bendeguz, Institut für Archäologien, Universität Innsbruck, Innsbruck, Austria (Presenting author)
Keywords: Byzantine, glass weight
Presentation Preference - Oral

Byzantine glass weights are essential tools of a regulated and controlled coin circulation. To understand the financial management and ultimately the Byzantine tax system of the 6th and 7th century AD they are of a great use. They are made of different glass of different colour. Garnets are pale yellow and green colours, but even pieces made of dark blue and red or opaque brown glass occur. On the front side they are stamped sometimes with the bust of a dignitary surrounded by a legend including his title and name. The majority of the weights are stamped with the names of dignitaries in the form of monograms.

For the first time 1300 Byzantine glass weights were systematically collected from various public and private collections in a database. About the half of these weights were studied and measured by the author himself to achieve reliable data. The typology of the glass weights is based on the inscriptions, various monograms and figurative elements. The aim of the project is to establish a typological and chronological framework of glass weights from the period of the 6th and 7th century AD.

The main problems in the research of the glass weights occur in the understanding of the whole system and the chronology of the different weight types, which is based on their iconographic identification.

THI-24 Abstract 08

Multifaceted Head of Neck Ornaments “Perm Type”

Author - Archaeologist Khan, Nikolay, Vjatskaja Archaeological Expedition Ltd., Moscow, Russia (Presenting author)
Keywords: EAA9849, Managing the Archaeological Heritage
Presentation Preference - Oral

The neck silver jewelry of the Viking Age in a large number found in hoards in the Kama River basin, had multifaceted clasp, which was a truncated pyramid. The usual method of archaeological search for analogies, is comparative benchmarking, let still detect only similar things. In fact, many-sided fastener rings “Permian” type is half the geometric figures tetrahedron with truncated corners, which found in Hungarian antiquities originating in the territory of Anglo-Volga by Alexander Spitsyn. It is an object against a fastner ring and a size two times greater than it.

Therefore the search for the source of a head, which said Ture Arne even have continued in Iran and the African side. Finding head of the Hungarian antiquities 9-10 centuries suggests that the rings of the Permian such as appeared in the area between the Vykta and Kama in the ancient homeland Udmurt-Finn-Permian population as cultural synthesis (cultural genes). But they began to fall out in hoards with the Arab coins first on Gotland, and then Southern Sweden and Denmark and is only the latest in Vykta and Kama. With 833 for 845 years.

Neck decoration Scandinavians were of iron, they were not used and the Slavs. Slavs used as an expensive silver jewelry and fashion item or as a store of value. But in Sweden rings Permian type were made to get rid of the excess of silver in the form of coins, which were worn as bracelets.

Ring necks were brought to the Baltic States through the Arab coin, which is before the first silver crisis of 60 - 90 years of the 9th century rushed flow to Sweden. Therefore the treasures with the Arab coins could fall in the period of excess revenues coins from the east, and in pig iron, besides multi-faceted neck ring head marked by 2 things: bracelets on hand, clasps-fibulae.

Mass discoveries brooches, buckles during archaeological excavations in the Baltic States are talking about ethnic identification of this type of things, but in the entire Baltic region is alien neck rings and bracelets. Some of the findings of these items without heads arrived in the Eastern Baltic from different ethnic backgrounds, because they are known only in hoards. All three subjects costume complex served as money, and the neck ring served as ring money By Br. Čaho. Cash and weight standards allow a very high degree of accuracy to determine specific ethnic identity even hoards. If weight hoards standards correspond to the different ethnic groups, and it indicates the direction of trade relations or to cultural and consumer preferences cash holders. Treasures, consisting of the neck rings is preferable to studying in weight than coin treasures, as things that are hidden in them larger and the measurement error is small. Weight measurements artifacts nesassary. They may correspond to the Nordic, Byzantine, Iranian, Prussian, Danish weight standards: 343, 327, 404, 200, 16, 120, 250 grams. Alone or in combination. Neck ring in hoards have tangible evidence of large wholesale trading or tax collection.

THI-24 Abstract 09

A new type of weights from Volga Bulgaria

Author - Koval, Vladimir, Institute of archaeology RAS, Moscow, Russian Federation (Presenting author)
Keywords: medieval market, Volga Bulgaria, weights
Presentation Preference - Poster

In 13-14 cc. Volga region of centuries, mysterious objects have been known. They were bronze cylinder of 2 halves on which flat surfaces are placed relief images of a lion (and a) two with birds. These cylinders are hollow or filled with lead. Previously they were called matrices, seals or stamps. In fact, such weights, a large number of which were found during excavations of the market in the center of the Volga (the capital of Volga Bulgaria), were made exactly in Bolgar.

THI-24 Abstract 10

Roman weights from Aquileia: identification proposals of their ancient users

Author - Graduated Stud. Sutro, Maria, Università degli Studi di Padova, Padova, Italy (Presenting author)
Keywords: Aquileia, Roman weights, Weight's users
Presentation Preference - Poster

Aquileia was one of the richest and most prosperous Roman colonies from the Republican period until the Imperial Age. It was also a very important landmark for commercial trade from its foundation (181 A.D.) till the late antiquity. The copious findings of metallic and stone weights in the different urban and rural areas of Aquileia - today hardly recognizable - are in fact a meaningful proof of the city's economic role in all the north-eastern area of the Roman Empire. Some important questions have emerged: who were these Roman weights' users? Who owned weighing artifacts in ancient Aquileia? There were certainly different users of these weights, depending on their function and their context of use. Both the iconographic, literary and epigraphic sources give only few and meagre answers to these issues. Nevertheless, the weights themselves can provide more accurate hints about their uses. It is possible, for instance, to distinguish official ponders, used in public contexts, from private ponders, used inside small shops.

Speculations about the identity of the weights' users may be suggested for some of them, thanks to the different data gathered from stratigraphic-archaeological and morphologic studies. For example, the official weights found in the proximity of the fluvial harbor of Aquileia were surely employed by magistrates sent by the central authority or by officials in charge of the measures' surveillance. It is possible also to make some assumptions about private weights. The recent investigations in the domus located in the “ex Conser propury” in Aquileia, carried out by the Cultural Heritage Department of the University of Padua, have been an important source of information. The several stone and metallic Roman weights found there might probably be used in the commercial area of the domus, overlooking a street. The founding of these artifacts, one of them with the user's name inscribed on its surface and possibly related to a domestic context, raises some interesting questions, as was there any relationship between the domus' owner and the weights' owner? If there was any, what was it? Were they the same person? Did this person carry out a guarantee role upon the weighing instruments employed in his property or was he an external tenant? The attempt to retrace the identity of the Roman weights' users could mean to find out the role fulfilled by them inside the ancient society of Aquileia: were they magistrates sent by the authority or private citizens? Hence, Roman weights may provide important valuable insights into the typologies of the measuring control system carried out in the city during the Roman period.
The Case of the Wreck Found in Valle Pega (Comacchio, Italy)

In 1981 in the delta of the Po river, in Valle Ponti near Comacchio, was found one the wreck of a Roman ship with its cargo. The boat was engaged in small scale coastal shipping, but it was able also to transport by river. The shipwreck occurred around 12 BC along the north-western Adriatic coast, between two branches of the ancient Po.

The ship’s cargo excavated by archaeologists includes a big variety of merchandise: lead ingots, some with the stamp of Agrigola, amphorae and ceramics of various type and provenience, lamps, wooden beams, fourths of meat and various small objects, including several little lead temples.

A turn-over steelyard for retail trade and a big stone weight were also found in the cargo. They were part of the ship’s equipment. The turn-over steelyard has two capacities and a stamp with the mention of one personage, probably the mensor who built the instrument in according to similar finds. The stone weight, a centussis (100 librae), was used instead for wholesale trade. This weight has an inscription too, which mentions in this case the magister navis, the shipmaster, as recently proposed.

Analysis of weights and measures from the flat axes mould discovered in Pendia’s Hillfort (Spain)

In 2008 a flat axes mould was discovered in one of the streets of Pendia’s Hillfort, a fortified enclosure in NW of Iberia (IV BC-II AD). Despite its location, in secondary position after using for casting, this find shows a long term survival. Moreover, this mould is related with the first metallurgical activities in our region. Finally, this piece allow a first approach to check if there is some patterns in weights and measures issue during the production of several prehistoric tools.

TH1-24 Abstract 12

Scales and Weights in Roman Trade: The Case of the Wreck Found in Valle Pega (Comacchio, Italy)

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The finding of these measuring instruments on the Valle Ponti’s wreck provides an opportunity for some remarks about weighing procedure on Roman maritime and fluvial trade and about official control of scales and weights.

TH1-24 Abstract 11

Analysis of weights and measures from the flat axes mould discovered in Pendia’s Hillfort (Spain)

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TH1-25 Abstract 01

How do we understand animal deposits from the Roman Iron Age in the wetlands in Denmark?

Animal deposits are perhaps the most frequent type of sacrifice in Danish wetlands, and they appear in most of the prehistory. However, in Denmark animal deposits tend to be overlooked compared to other finds from the wetlands, which includes precious metal objects, bog bodies and weapons etc. In contrast, our neighboring countries traditionally prioritize animal deposits a little higher. However, there is still a tendency to look upon animal deposits from a zoological point of view. In order fully to understand all aspects of the Iron Age utility of the wetlands, we have to reexamine the animal deposits and discuss their part in sacred and profane lifestyle of the Iron Age. Most importantly, we must focus on the deposits and their context, not just consider them as zoological objects but also acknowledge the animal deposits as archeological objects with substantial information about society, people and beliefs.

During the last eight years, a large number of animal finds, both sacred and profane, have been excavated from wetlands in northern Zealand. Especially the ongoing excavations at the site called Sælpetermesen have revealed a small bog with numerous sacred animal deposits. Though still preliminary, a vast amount of results seem to be the outcome, which will enable us to interpret both the new finds as well as reinterpreting some of the old finds from northern Zealand. So far, the new discoveries can contribute with information about the variation of sacrificed animals, which parts that were sacrificed, the combination with other items, the context in which they were sacrificed and the differences compared to the profane animal deposits etc.

Finally yet importantly, animal deposits contribute to the discussion about the utility of wetlands. Were their sole purpose to be marginal, mystical and sacred places or were they all that and part of the daily profane life? In other words, based on animal deposits, we should take a holistic point of view when it comes to wetlands.

TH1-25 Abstract 02

Bokaren- a bog revisited

During the last eight years, a large number of animal finds, both sacred and profane, have been excavated from wetlands in northern Zealand. Especially the ongoing excavations at the site called Sælpetermesen have revealed a small bog with numerous sacred animal deposits. Though still preliminary, a vast amount of results seem to be the outcome, which will enable us to interpret both the new finds as well as reinterpreting some of the old finds from northern Zealand. So far, the new discoveries can contribute with information about the variation of sacrificed animals, which parts that were sacrificed, the combination with other items, the context in which they were sacrificed and the differences compared to the profane animal deposits etc.

Finally yet importantly, animal deposits contribute to the discussion about the utility of wetlands. Were their sole purpose to be marginal, mystical and sacred places or were they all that and part of the daily profane life? In other words, based on animal deposits, we should take a holistic point of view when it comes to wetlands.
Archaeological finds of human and animal remains in bogs and wetlands are random and unpredictable causing trouble for both archaeologist and antiquarian authorities. In Sweden new finds are scarce but searching museums and archives you can find numerous notes of earlier discoveries. This paper asks the question what is the potential in these old notations by presenting recently conducted work on one such a site - Lake Bokaren in central eastern Sweden just some 20 kilometers east of Uppsala.

The place was first found when farmers were trying to ditch out the bog/lake to retrieve new farmland in 1939 and found to two human skulls and a couple of horse skulls. The finding was followed by a small excavation in 1941 where more animal bones (primarily horse skulls) were retrieved alongside with a wooden platform covered with flux. Unfortunately this quite spectacular find were forgotten about and the report never written up. It’s only been referred to in some texts. We have now been able to reconstruct most of the material from the excavation that was spread out in different museum storages and we have studied the documentation. We have also dated some the human skulls and some of the animal’s bones and performed osteological analysis of the human skulls. Last year we got the chance to return to the place for a small scale research excavation to see how the finds had been preserved and trying to find out how big the actual site was. We found another human being and two horse skulls together with worked wood. The site appears to be quite big, and there is more the 35 meters between the findings of horse skull and human bones and we were not able to find the boundaries of the site. The ritual practices spreads out for a about 1000 years from 300 AD until 1300 AD, which is quite remarkable since it means well into the Swedish middle ages and Christian period. It’s interesting that both the humans and the animals have been exposed to similar types of violence on this site, and this might be one of the clues in how to interpret the mysterious bog bodies. Lake Bokaren is placed near double parish boundaries, between Rasbo and Stavby parishes. This can be interpreted as if this was a place where various localities got together around sacrifice.

It’s also challenging to try and put the place in perspective in connection to folklore and oral traditions in the neighborhood. For instance many holy springs are known in the area.

TH1-25 Abstract 03
Place-lore concerning bog bodies and a bog body concerning place-lore
Author - Kama, Mine, University of Tartu, Tartu, Estonia (Presenting author)

...Under the swamp sods and when chopping down shrubs, many human bones came out from Lawrinoo ‘encampment swamp’. Also pigs dug out human bones with rusted pieces of iron. It seems that fighting had been so fierce that there was not enough time to bury the dead, so they were trampled into the swamp [---]. (E 63001/2)

The aim of this paper is to introduce Estonian place-lore concerning bog bodies. This oral history is collected and written down mostly in the past, but some narratives are vital among locals also nowadays. There are different stories that describe burials, drownings, suicides and executions in wetlands: actions that may result in bog bodies. In oral tradition, there is also place-lore describing finds of human remains from peat. This refers to incidents where bog bodies were found in the past of which we do not have any knowledge based on archaeological records. In more details I show how a real archaeological find, a Fabrisere bog body is reflected in place-lore. How information in place-lore is comparable with archaeological data and how this folklore should be received by archaeologists, will be discussed.

TH1-25 Abstract 04
Sacrifice and necropolitics
Author - Associaate Prof. Christina, Fredengren, Stockholm, Sweden (Presenting author)

This paper will analyse mechanisms of inclusion and exclusion in Late Bronze Age and Iron Age Scandinavia [with case studies mainly from Sweden] manifested in the deposition of human and non-human remains in places outside burial grounds such as in wells, rivers, wetlands and bogs, traditionally seen as sacrifices. Problematising the concept of sacrifice, this paper will deal with the question of bio-politics insofar that it will look at what lives these individuals led as reflected in the skeletal remains. It also particularly deals with questions about Necropolitics and the control of the boundary between life and death and the effects of such control on societies, but also reflect on Zoe-politics as a historical phenomena (cf. Agamben 1998, Mbembe 2003, Braictid 2013).
The presentation will introduce assemblages of stone grinding tools from the late Neolithic sites (4900 – 4500 cal. BC) in the Šumberov. The project has also sought to develop method in use-wear analysis, notably through the use of high-life biographies that the flint artefacts hold, and in this way contributing to understanding the temporality in depositional practices at causewayed enclosures. For southern Scandinavia, Sarup (Denmark) results. From the use-wear analysis offer a way of characterizing activities at these sites that has not been explored in the past. In particular, use-wear analysis has been able to reveal some of the encased life biographies that the flint artefacts hold, and in this way contributes to understanding the temporality in depositional practices at causewayed enclosures. The project has also sought to develop method in use-wear analysis, notably through the use of high-life biographies that the flint artefacts hold, and in this way contributing to understanding the temporality in depositional practices at causewayed enclosures. The ambition is to create a synthesis about life biographies of artefacts from the Stone Age via practises and activities that the material culture reflects.

As such research has all too often focused on the deposition as the ritual rather than the deposition as part of a larger ritualised practice that culminated but is not limited to the deposition. In order to rectify this, in this session the presenters will address the narratives of ritualised practices by studying the biography of the objects contained within ritualised depictions. By studying ritual depictions using a biographical approach we may be able to understand better the temporality of the practices that culminated in the deposition including but not limited to the use, treatment, modification, selection and arrangement of artefacts. This paper presents a closer look at the phenomenon of monumentality in the early Neolithic, at a micro scale. The methodological approach is use-wear analysis of flint assemblages from selected contexts of a number of well excavated early Neolithic causewayed enclosures in southern Britain and southern Scandinavia. The UK sites include: Etton (Cambridgeshire) and Staines (Surrey), with reference also being made to preliminary analyses of assemblages from Hambleton Hill (Dorset) and Windmill Hill (Wiltshire); for southern Scandinavia, Sarup (Denmark). Results from the use-wear analysis offer a way of characterizing activities at these sites that has not been explored in the past. In particular, use-wear analysis has been able to reveal some of the encased life biographies that the flint artefacts hold, and in this way contributes to understanding the temporality in depositional practices at causewayed enclosures. The project has also sought to develop method in use-wear analysis, notably through the use of high-life biographies that the flint artefacts hold, and in this way contributing to understanding the temporality in depositional practices at causewayed enclosures. The ambition is to create a synthesis about life biographies of artefacts from the Stone Age via practises and activities that the material culture reflects.

TH1-26 Abstract 01
Taking a closer look – causewayed enclosures through the lens of a large scale use-wear analysis

Author - Bye-Jensen, Peter, University of Southampton, Hayling Island, United Kingdom (Presenting author)
Keywords: Neolithic Britain, life biographies, depositions, use-wear, Neolithic, causewayed enclosures
Presentation Preference - Oral

This session will focus on creating biographies of lithic material culture, artefacts, as a means of understanding relationship between an artefact and its final deposition. The aim of this session is to look through the vast span of time from the Palaeolithic to the end of the Neolithic, and let researcher’s present examples of conceivable “chains of practices” that culminated in ritualised depositions. From well used and unused, to sharpened and dulled and to burnt and broken all objects underwent multiple stages and “chains of practices” prior to the final deposition. However, this life history of an object is all too rarely taken into account when archaeologists discuss ritualised depositions. As such research has all too often focused on the deposition as the ritual rather than the deposition as part of a larger ritualised practice that culminated but is not limited to the deposition. In order to rectify this, in this session the presenters will address the narratives of ritualised practices by studying the biography of the objects contained within ritualised depictions. By studying ritual depictions using a biographical approach we may be able to understand better the temporality of the practices that culminated in the deposition including but not limited to the use, treatment, modification, selection and arrangement of artefacts. The ambition is to create a synthesis about life biographies of artefacts from the Stone Age via practises and activities that the material culture reflects.

TH1-26 Abstract 02
Grinding Tools and Circular Enclosures - Ceremonial Behaviour or Common Refuse Management?

Author - Úútí, Jaroslav, Prague, Czech Republic (Presenting author)
Co-author(s) - Burgert, Pavel, Prague, Czech Republic
Co-author(s) - Končelová, Markéta, Prague, Czech Republic
Co-author(s) - Sumberová, Radka, Prague, Czech Republic
Keywords: Circular enclosures, Grinding tools, Neolithic
Presentation Preference - Oral

The presentation will introduce assemblages of stone grinding tools from the late Neolithic sites (4900 – 4500 cal. BC) in the Czech Republic that were collected in the vicinity of circular enclosures (rondels) the function of which is assumed to be socio-ritual. The assemblages consist mostly of fragments of tools from ditch in fillings of the rondels, or from other pits in their vicinity. We would like to present assemblages from several long-term excavations where the origin of raw source, the manufacturing process, the stage of preservation, and the location of the artefacts in relation to the rondel or other features are known. The following issues related to the socio-ritual features and other surrounding artefacts will be discussed: Is there any evidence that there is a direct relation between the grinding tools and the socio-ritual structure, such as ritual grinding activities during various ceremonies, or do they represent just a common refuse management in the settlements? Why were some of the grinding tools intentionally destroyed and others not?

TH1-26 Abstract 03
The ritual use of flint

Author - Prof. Larsson, Lars, Department of Archaeology and Ancient History, Skivarp, Sweden (Presenting author)
Keywords: fire, flint axes, Southern Scandinavia
Presentation Preference - Oral

In South Scandinavia, as in other areas, flint had a special position as a raw material for making a variety of tools. Flint was not only an important element of daily activities, however; it also became a catalyst of ritual. Flint became a very important element in marking the relationship between people and their conceptions of a different world populated by deities and dead ancestors. In this relationship flint axes played a very special role. The final stage of axes was mainly determined by shape and cultural connections. Deliberate deposition of axes in Southern Scandinavia chiefly occurs in a large number in wetland but also at and in megalithic graves. The transformation of flint tools could also involve changing the material through heating. The use of heat differs depending of tool types. A small number of sites have a large amount of material from deliberate heating, while the majority of other sites, such as megalithic graves, causewayed enclosures and palisades have a smaller number of objects partly altered by fire, primarily axes. These deposits are also combined with waste from the manufacturing of axes, combining “birth” and “death”.

TH1-26 Abstract 04
From the living to the dead.
Lithic artefact deposits in TRB burials in Jutland

Author - Cândroswska, Marzena, Aarhus University, Wrocław, Poland (Presenting author)
Keywords: burial, lithics, TRB
Presentation Preference - Oral

From the Megalithic period onward, sometimes even up to the Iron Age, lithics are frequently found in funerary contexts. Evidence of ritual use of flint is known from Neolithic settlements, enclosures, ritual houses and graves. Several traditions of treatment and handling of flint such as ritual destruction, burning or scratching the surface of the artefacts were recognized. In this paper, special emphasis is placed on possible role and meaning of lithics in TRB burial ceremony rituals. Artefact analyses were divided in two major parts. First, the technology of production and the possible traces of use found on flakes, blades and tools were discussed. The second part consisted of statistical analysis of lithic artefact type variation and their possible relation to other grave goods. The results were then compared to the ones obtained from material from TRB settlements. This leads to the general discussion about the interpretation of role and meaning of flint in the burial context. By using such combination of methods, it is possible to discuss different reasons for placement of lithics in the burial context. Various artefacts could be interpreted either as a part of the grave goods set (accessories for further life in afterworld), the belongings of the deceased (which could signify his status or occupation during his) or traces of ritual knapping or other activities during the burial ceremony.

TH1-26 Abstract 05
The biography of megalithic art at Millin Bay, Northern Ireland

Author - Dr. Robin, Guillaume, University of Edinburgh, Edinburgh, United Kingdom (Presenting author)
Co-author(s) - Dr. Hensey, Robert, National University of Ireland, Galway, Galway, Ireland
Keywords: Digital methods, Megalithic art, Neolithic Ireland
Presentation Preference - Oral

The megalithic monuments of Western Europe are famous for their engraved and painted decoration which adorns the walls of their chambers, passages and sometimes their external features. While most of that art was primarily created to be seen within the fixed setting of the monuments, excavations and studies in Iberia, France and Ireland have shown that a surprising percentage of the art was hidden in inaccessible parts of the architecture, or was erased from the walls, and that many decorated stones were broken and reworked before being re-employed as the structural components of new monuments. This raises at least two important questions: what was the earliest history of the decorated stones before they were placed inside the monuments? And, what was the role, if any, of such ‘un-displayed’ art in their final monumental contexts?

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The ambition is to create a synthesis about life biographies of artefacts from the Stone Age via practises and activities that the material culture reflects.
An interesting case study is the Neolithic site of Milin Bay in Northern Ireland, dated c. 3600-3300 BC. The site was excavated in the early 1960s, revealing an unusual long oval side structure containing 16 burials and 64 stones with decoration associated with the Irish megalithic art tradition, which regularly features abstract carved motifs (concentric circles, spirals, meandering lines, etc.). Several of these stones display evidence of intentional breakage, as well as several episodes of art- making leading superimposition, suggesting that the decorated stones had a complex biography before subsequent use in the buried architecture of the tomb. What happened to these stones before they were eventually deposited underground and used as structural components in the monument?

This paper will present the results of new recording and analysis of the decorated stones from Milin Bay. Using photographic techniques and 3D structure from motion photogrammetry, we examine technical signatures in the making of the art as well as overlapping art indicating sequences of art production, together with evidence of intentional breakage and other alterations of the stones. This examination allows us to infer the multiple stages and 'chains of practices' involved in the production, use and reuse of Milin Bay stones as ritual artefacts.

Here we approach megalithic art not as a spatially and temporarily fixed assemblage of structural stones but as a series of individual artefacts that were moved, transformed, decorated, reworked, sometimes broken, and eventually brought together and reused as structural elements to create the architectural settings of the monument.

This paper will consider Milin Bay in its broader context, with reference to wider evidence of reworked and displaced megalithic art in Ireland and Europe, and will discuss the reuse of megalithic art as representing a specialised form of prehistoric monumental construction.

TH1-26 Abstract 08

Useful, beautiful or ritual?
The life biography of grave goods from prehistoric burial sites

Author: Kogalniceanu, Raluca, Institute of Archaeology, Bucharest, Bucharest, Romania (Presenting author)
Keywords: grave goods, Prehistory, South-East Europe
Presentation Preference: Oral

Neolithic communities used to send their members, on their last road, accompanied by various things, from pottery and animal bones to personal adornments, and other objects such as flint blades, axes, clay figurines, etc. The grave is supposed to be the final resting place for the human individual, but also the end-place of the objects accompanying the deceased. The analysis of grave goods usually focuses on typologies, quantities, whether they are gendered grave goods or not, and how they help to create the identity of the deceased. More rarely, they focus on whether they were especially created for the particular event of somebody’s burial or they had been previously used. The work done on the Neolithic and Copper Age funerary contexts from Romania showed us that, in most cases, the grave goods were especially designed for the dead and that these goods, and, in fact, had a life of their own before that. The longest chain of events in an object’s life identified so far belongs to the adornments made of Spondylus shell that underwent long-distance trade, manufacture, short-distance trade, wear, repair or transformation (or both), wear, and deposition. Another object with a medium life biography is the stone axadze/chisel, which could include medium-distance trade, manufacture, use, repair, use and final deposition. On the other hand, there certainly seem to be objects with a very short biography, namely those fabricated especially for the event of the burial. One example of this type seems to be illustrated by clay vessels or figurines that are poorly manufactured, indicating that their use might have been deemed from the start to be very short-termed. The presentation will review the data, with particular examples, mostly from the Lower Danube area but not exclusively, across a span of time covering the Neolithic and the Copper Age periods. I will also try to discuss the possible underlying reasons behind particular choices made by the prehistoric communities regarding the grave goods deposited together with the deceased.

TH1-26 Abstract 09

Function and meaning of stones from the grave of the Globular Amphora Culture in Wilczyce (Poland)

Author: MA (Mgr) Kiermed-Gubala, Katarzyna, Institute of Archaeology and Ethnology Polish Academy of Science, Warsaw, Poland (Presenting author)
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Keywords: grave, neolithic, stones
Presentation Preference: Oral

Stones were used by prehistoric societies in everyday activities, such as preparing of food, production of other tools made of stones, flints, bones or manufacturing of paints. They also served as a weapon, symbol of prestige and were an important material for dwellings, graves and other constructions of ritual meaning.

During the neolithic Globular Amphora Culture in Poland, the role of stone as a building material for grave construction was significant. In this time numerous objects covered with the stones or with stone floors, as well as with a grave goods are known. The Wilczyce site is located in southern part of Poland, in the Sandimierz Upland. The site is well known from earlier published finds and results of megalithic (megalithic) settlement, but it concerns also traces of neolithic occupation, connected with Globular Amphora Culture and Corded Ware Culture. There were few graves of this culture, where especially one is unique. It contained three human skulls probably originally situated on the stone or sand soil platform on the perimeter of grave pit. In the vicinity there were also
Interpreting the Archaeological Record

TH1-26 Abstract 10
The role of chipped stone artefacts in the Late Neolithic burial practice at Alsónyék (Hungary)

Author: Szőnyi, Károly, University of Széchényi István, Eger, Hungary (Presenting author)
Keywords: chipped stone artefacts, Late Neolithic, Alsónyék

The Late Neolithic Alsónyék-Biálaszék site has enormous extension, which reflects in large amount of stone tools (nearly 8000 piece stone tools). This site’s chipped stone assemblage contains many long-distance import stone tools (e.g., large-size volhynian flint blades which were removed by indirect percussion). The enormous extension of this site and structured construction of the settlement and a lot of burials; these factors which we can reason the intensive intercultural connections of the Southeast-Transdanubian group of the Late Neolithic Lengyel culture. This hypothesis is not reflected from the settlement’s chipped stone tools, in contrast to the stone tools from burials. These shows the raw material manipulation’s role inside the site. Based on these, we find the everyday’s ingredient tools (e.g.: blade, end-scraper on blade and end-scraper on flake) form local and regional raw materials. The long-distance raw materials made import tools from burials means the ritual sphere’s artefacts.

TH1-26 Abstract 11
Ornament biographies in amber and antler from the late Neolithic in north-western Norway

Author: Fjørtoft, Line, University of Bergen, Bergen, Norway (Presenting author)
Keywords: depositions, biographies, amber, antler, Norway, ornaments, Late Neolithic

In the coastal region of north-western Norway, pendants of amber constitute a characteristic element amongst the many objects deposited mainly in bogs in the late Neolithic (c. 2350-1700 BC). The pendants are of different shapes and sizes. Of particular interest are the crescent-shaped pendants that originally formed part of larger composite ornaments. These ornaments are also found in amber in the same area. This group of ornaments stand out from the other pendants of amber in terms of shape, but also from the other ornaments of amber in terms of content. Whether manufactured locally or imported as finished products, the amber itself had to be imported, suggesting these ornaments were highly valued items, used for expressing both social status and identity.

Belonging to a rich and varied group of depositions from the late Neolithic and early Bronze Age in Norway, the crescent-shaped ornaments have been interpreted as votive offerings. However, this hypothesis does not necessarily provide the best tool for understanding the ornaments and their deposition. In the present study of the ornaments in both amber and antler, a biographical approach is applied, focusing on the relations tied to the objects during their life-course. Against this backdrop, an alternative view of the ornaments, their role in society and the final deposition is presented.

TH1-26 Abstract 12
A biographical analysis of Mesolithic hoarding in South Scandinavia

Author: Sorensen, Lene, University of Southern Denmark, Odense, Denmark (Presenting author)
Keywords: hoarding, Mesolithic, ritual

Hoarding has often been characterised as a ritualised post-Mesolithic phenomenon, but when similar Mesolithic deposits are identified they are often considered ‘unique events’ and as profane caches of raw material. These Mesolithic hoards, which are often carefully arranged or bundled, contain a wide range of objects: from blades, cores and debitage, to axes, beads and unusually large or unique objects. Preliminary results from this study indicate that some of the objects appear to have been produced immediately prior to deposition, whilst others appear to be well-used, and even burnt or broken. All too often hoards are just considered as an isolated event of deposition, instead of the final stage in a chain of practices that led to the act of deposition of particular objects. Without understanding the pre-depositional life history of the objects in these deposits we severely limit our interpretation of the deposits themselves, the possible pre-depositional ritualised practices that culminated in these hoards and why specific objects were deposited in this manner.

This paper seeks to address the following questions:

Are there any large-scale patterns or are they all idiosyncratic and isolated events? Do these deposits represent profane caches, ritualised hoards, neither or a mix? What, if any, relationship is there between the pre-depositional life history of the objects and the mode of deposition?

By understanding the biography of these objects and practices we may further our understanding of both Mesolithic ritualised practices as well as the longue durée of hoarding practices in Southern Scandinavia.

TH1-26 Abstract 13
Ritual Objects as Offering at the Eneolithic Shrine

Author: Kolitschikova Nasteva, Irena, Archaeological Museum of Macedonia, Skopje, Macedonia (Presenting author)
Keywords: ritual objects, shrine, traces

At Eastern part of Macedonia, near Kocani few years ago the archaeologists discovered an Eneolithic shrine St. Atanasij which is nearby the Eneolithic site-village. Both are of the same period, 4th millennia B.C. The shrine is positioned on a small hill and it communicates visually with the settlement. It was used by the inhabitants from this settlement and probably from another nearby. Throughout the excavations there where found various ceramic dishes, zoomorphic and anthropomorphic figurines, altars (sacificial items), tools made of stones and bones, as well as many animal bones. Most of them were gifts probably donated by the inhabitants honouring their festivities and beliefs through various rituals. Majority of the material was discovered in fragments, which leads to the conclusion that the items were being crushed in ritual ceremonies.

It is interesting that around these spaces, no remains of wattle-and-daub were found or traces of supporting poles from the buildings construction. The evidence that there aren't any mud walls confirms that the site is a shrine, not a village.

TH1-26 Abstract 14
Amber Disc from Daktariškė 5 Neolithic Site:
Archaeology, Use-Wear, Infrared and Raman Spectroscopy

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Keywords: Amber, Daktariškė 5, Late Neolithic

Presentation Preference: Poster

Traditions of amber collecting, production and distribution in the Eastern Baltic – at least in Lithuania, Latvia and territories later inhabited also by Baltic tribes – mainly, Prussians, reach back as far as the very beginnings of Early Neolithic and has an uninterrupted history of 6400 years.

The large Stone Age amber collection are known from Baltic Sea coast settlement complex in Sventoji and Curonian peninsula (Juodkrantė, Nida). From the area of big lakes, mainly Biržulis Basin the largest collection of amber artefacts are collected in Daktariškė 5 Neolithic settlement located in the wetland area. The Daktariškė 5 site is 3,6 cm in diameter and has a linsel-shaped cross-section with a small hole in the centre; it has a fine polished surface and is made from good-quality yellowish amber. One side of artefact is divided in four unequal parts by a triple cross made of slight indentations. Along the edges one, two and four small triangles are formed by slight thin lines rather than indentations. The other side of this disc is also ornamented: along its edges eight differently sized and double broken lines of indentations. The other side of this disc is also ornamented: along its edges eight differently sized small triangles are formed by slight thin lines rather than indentations. This disc, due to the very good preservation to bear special coded information unlike any other artefact found in Lithuania or the rest Eastern Europe, it appears that the remains of dark resin can still be seen in the some of these indentations.

By this reason special traseological, infrared and Raman spectroscopy investigation were carried on by the scientists of Vilnus Academy of Arts, Klaipėda University, Lithuania National Museum and Center for Physical Sciences and Technology of State science institute.

Traseological analysis was conducted on amber disc from the Daktariškė 5 Neolithic site. During investigations, use-wear and manufacturing traces were detected on the artefact. Analysis showed that during production of the amber disc two different kind
Interpreting the Archaeological Record

near Zvejnieki archaeological site, but the colors are yellowish or brown (gothite). Thus, the material was not directly suitable for material, iron rich minerals were collected from different parts of Latvia. The laboratory analysis for characterization of the material included granulometry evaluation, color spectrum, mineral treatment in various temperatures and wax was identified. This investigation has proved FTIR and micro FT-Raman spectroscopy could be particularly suitable technique for non-damaging analysis of such significant archaeological objects.

TH1-26 Abstract 15

Color Symbolism and its Reflection in Prehistory of Latvia

Author - PhD candidate Kokins, Algirdas, University of Latvia, Faculty of Geography and Earth Sciences, Riga, Latvia (Presenting author)

Presentation Preference - Poster

There are many ways how to approach the study of history – archaeological evidences in excavation sites, dating methods, pollen analysis as well as stratigraphy of geological layers, DNA sequencing techniques for tracing migration routes, adenine analysis etc., to capture in a frame of reference physical evidences of early humans and their past. By studying physical evidence, we see close links to psychological, social and behavioral traits, as well as development of societies, evolutionary perspectives of human mind and material culture. Harder to approach are the development of linguistic capacities, cultural activities as dance and religious beliefs - cosmology and symbolism, primarily - color symbolism through prehistory. Stone Age cemetery Zvejnieki (8-8, BCE) is closely associated with the usage of red and processed minerals - like red ochre in burial grounds. As well as evidence for white circle structures, that point to ritualistic symbolism. Thus, the physical evidence here reflects on mental phenomena linked to early mesolithic and neolithic nomadic tribes.

The archaeological site Zvejnieki was excavated in 1960, and physical evidence of the colors that were used is no longer available. However, it is still possible to study indirectly the question about the mental and physical capacities involved, in order to recreate a span in time, where such activities as coloring a deceased family member was a valuable task to do. In the study, the first questions to answer were weather there are naturally occurring ochre site in near proximity from burial grounds and in such case what are the material properties of ochre color and purity of the tone. Further research was directed to find out if modification of natural ochre could take place and what could be the range of colors possible to obtain from local material. At the same time information about similar symbolic behavior in other archaeological sites were studied.

During the research the ochre source minerals were found near Stone Age cemetery Zvejnieki. The laboratory analysis for characterization of the material included granulometry evaluation, color spectrum, mineral treatment in various temperatures to alter the color and different natural binders were tested. In order to compare the color variation defined by impurities in the material, iron rich minerals were collected from different parts of Latvia. It should be noted that considerable amount of ochre color source material can be found in less than a 500 m distance near Zvejnieki archaeological site, but the colors are yellowish or brown (gothite). Thus, the material was not directly suitable for the purpose of red burial. However, the experiments conducted confirm that it was relatively easy to alter color, if necessary, by treating material in temperature not exceeding heat of ordinary campfire to gain a consistent red color (hematite).

Overall, it can be concluded that it is necessary to carry out appropriate documentation in burial sites where the use of colors are present, for example, the chemical composition analysis. It can help to provide a valuable insight into such fine aspects of prehistory culture as symbolism.
Are Merovingian brooches inalienable personal possessions?

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Keywords: Dress and identity, Early Medieval, Gender

Presentation Preference - Oral

Many apparently highly valuable objects were deliberately left behind. What lies behind the selection? It will be suggested that the life trajectories which could end in graves differed significantly between artefact types, especially in the degree and nature of objects’ connection with their owners, leading to different capacities for separation from the bodies with which they were eventually buried. An argument will therefore be made for low fungibility between many fifth-to-seventh-century grave-good types: different forms of possession did not necessarily bear equivalent or interchangeable forms of value. Considerable complexity needs adding to our understanding of artefact worth in this period – in particular its emergence from interactions of human and object life courses.

How much is that necklace in the coffin?

Author - Dr. Klevnäs, Alison, Stockholm University, Stockholm, Sweden (Presenting author)

Keywords: Artifacts, Burial, Early medieval

Grave robbery – a practice of reopening recent burials and taking objects from them – was widespread across early medieval Europe, peaking in the seventh century. Affected graves have been recorded in hundreds of cemeteries from eastern Austria to southern England. Their disorder and depletion contrast markedly with the carefully laid out and often lavishly furnished burial displays of the period. Many explanations have been put forward for the reopening practice, but common interpretations are that high-value artefacts or high-value reusable materials were being recovered from graves. This paper looks in detail at how objects in particular were taken from graves, using results from recent research (reopenedgraves.eu), it shows that only a limited range of artefact types were taken, but that the selection was not based on raw materials or use value.

Cheap’ bone things, games and travel – on the value of gaming-pieces in an early medieval grave

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Keywords: Early Medieval, Gender

Presentation Preference - Oral

A grave from Merovingian times, recently found by chance in Leipheim (southern Germany), revealed some small finds that give us a glimpse on the possible dichotomy between the material value of a thing and the ‘real’ value perceived by onlookers at that time. It is a single grave of a man dating roughly to the late 6th or early 7th centuries AD. Buried with weapons, a silver buckle, a glass beaker, a biretta and most prominently a horse, the man’s grave furnishings range well above average for that time and region; yet, the only outstanding finds are fourteen gaming-pieces and a die. Accessories for board games are extremely rare in the – otherwise often so richly furnished – graves of the 6th and 7th centuries in continental Europe. Also, the gaming-pieces in Leipheim belong to a type not known in southern Germany so far, with the closest parallel found in the exceptionally richly furnished burial mound in Taplow, Buckinghamshire, England. While the grave’s furnishings in Leipheim are poor in comparison to Taplow, they still allude to the same lifestyle – which is, in short and clichéd: horse-riding warriors drinking and playing board games (or maybe rather: high-ranking men entertaining guests with drinks and games). Both the context gaming-pieces are usually found in, i.e. very richly furnished graves of men, and their general rarity seem to indicate board games were restricted to a rather exclusive echelon of society. At the same time, their material value can be estimated as quite low, as both the raw materials and the skills to produce gaming-pieces – even the nicely turned Leipheim and Taplow ones - were easily available. Thus, gaming-pieces highlight how value might often be not so much in the things themselves but rather in how and by whom they were used. They raise questions of where, how and from whom both the gaming accessories and, more importantly, familiarity with the concept of board games were acquired, and also whether their rarity in graves mirrors their restricted use in the living society, or only representational needs that only were relevant for some funerals. The presentation aims to explore these and also some more thoughts on where the idea of board games might have come from, and why gaming-pieces were so rarely put into graves.

“Amulets” in Anglo-Saxon graves

Author - Dr. Hills, Catherine, University of Cambridge, Cambridge, United Kingdom (Presenting author)

Keywords: Amulets, Anglo-Saxon, Burial

Presentation Preference - Oral

Anglo-Saxon women’s graves of 5th-7th century sometimes include items which have been described and discussed as “amulets”, by Audrey Meaney (1981) and others. These are not functional dress fasteners or ornaments, although they may include broken brooches, belt fittings or horse harnesses. There are also fragments of glass, pieces of Roman scarabs such as crystal, chalk or animal teeth. Some elements of necklaces such as pierced Roman or Iron Age coins can also be seen in this context. Bags containing one or more of these items have been found by Fielder (2014) to be associated with gender-hangers, and interpreted as indications of the special status of the women who wore them: not straightforwardly social or wealth statuts, but relating to the role these women played possibly in connection with birth and death. This paper will look at some of these items...
see how their significance and use changes over time in different contexts, for example from a functional glass vessel to a worn broken fragment carefully kept and deposited in a grave. Questions to be asked include: what kind of ‘value’ did these things have for the woman who were buried with them? Is the name ‘amulet’ appropriate? Do these objects provide a link between pre-Christian and Christian burial practice in Anglo-Saxon England?


Meaney, A. 1981 Anglo-Saxon amulets and curving stones British Archaeological Reports 98

TH1-27 Abstract 07

Value-added gold: The physical, social, and cultural re-purposing of Scandinavian bracteates

Author - Prof. Wicker, Nancy, University of Mississippi, Oxford, MS, United States of America (Presenting author)

Presentation Preference - Oral

Gold held high status during the Migration Period of the fifth and sixth centuries in northern Europe, as we learn from contemporary and later written sources such as Beowulf. Among the elite articles of personal adornment during this period were the widely distributed Scandinavian-type bracteates, which are one-sided, stamped objects that were provided with suspension loops and worn as pendants. These bracteates may have been markers of prestige to indicate gender, marital status, age, and lineage. The biography of bracteates can be traced from the mining of gold as a raw material, to Late Roman coins and medallions given as military rewards, and then to northern goldsmiths’ workshops where the coinage was melted down and made into bracteates. Thus the gold was transformed from material with economic value in one form (coins) into value in another form as personal ornaments that were distributed by gift exchange and worn by women. The significance and worth of these possessions continued to change as they were 1) given to others (perhaps bequeathed to descendants), 2) purposefully deposited into the ground in burials or hoards (curated and taken out of circulation), 3) melted down and re-purposed into other jewelry (permanently taken out of circulation), or 4) lost - perhaps to be re-discovered later. Subsequently, gold bracteates have been discovered by archaeologists, isotopes, metal-detectorists, farmers, and hikers, and their value is still recognized as we see documented in sales catalogues and in the records of the Portable Antiquities Scheme.

TH1-27 Abstract 08

The things with value. An ontological investigation

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Keywords: ontology, value

Presentation Preference - Oral

While ideas about the various and unstable meanings of value and possession as well as their situatedness have gained considerable interest within archaeology, the ontological statuses of these notions remain largely unexplored. This is problematic, for the reason that it leaves us in the dark about what we are actually talking about and, even more important, it keeps presumptions and beliefs about the nature of the world equivalent. Inspired by Deleuze, Guattari, and DeLanda, but also by Lucas, Fowler and Normark, I propose to investigate ‘value’ and ‘possession’ not as references to other abstractions, but as concepts and as such for the reason that it leaves us in the dark about what we are actually talking about and, even more important, it keeps presumptions and beliefs about the nature of the world equivocal. Inspired by Deleuze, Guattari, and DeLanda, but also by Lucas, Fowler and Normark, I argue, that it is these relations and interactions that continuously define and redefine ‘value’ and ‘possession’. Consecutively, objects are not passive receivers or holders of worth either, nor are they indifferently imbued with ideas of value or meaning, but are (re)defined by the interactions they establish with other entities that may or may not include notions of value or possession.

TH1-27 Abstract 09

Unraveling Value: Cultural Transmission Value-based Constraints among Blackfoot Ceremonial Bundles

Author - Walsh, Matthew, Aarhus University, Aarhus, Denmark (Presenting author)

Keywords: Blackfoot, Ceremonial Bundles, Cultural Transmission

Presentation Preference - Oral

Archaeologists are increasingly focused on understanding the implications of social learning on the development of material culture. Such studies look to establish the roles of social learning, individual choice, and information transmission within cultural contexts. This study examines the contents of Blackfoot ceremonial bundles to investigate whether heritable continuity is evident in their assembly, allowing for inferences regarding social learning, cultural transmission, and transmission bias among proto-contact Blackfoot bundle-holders. Among the contact-era Blackfoot, flexible concepts of the value of different material objects enabled individual bundle-holders to respond creatively when presented with historical, environmental, and social contingencies - and this fluidity is mirrored in ceremonial bundle materials. This study seeks to illuminate the relationships between bundle contents and their distribution in various bundle types as indicators of socially-prescribed and maintained traditions. As such, we hypothesise that rules prescribing a communal value to specific bundle contents were more or less flexible depending on the level of social significance attributed to the ceremonies connected to each bundle under the assumption that the greater the overall social significance of a bundle’s associated ceremonial practice, the more constrained bundle-holders were in the development or maintenance of particular contents. In contrast, bundle-holders in possession of bundles associated more closely with personal practice were able to embellish the contents of those bundles under less-prescribed social constraints.

TH1-27 Abstract 10

My worthless precious. Troubles with fluctuating value of Ancient Greek vases

Author - MA Miščić, Wawrzyniec, Jagiellonian University in Kraków, Kraków, Poland (Presenting author)

Keywords: Ancient Greece, Greek painted pottery

Presentation Preference - Oral

Estimating the value of an artifact could prove to be a difficult endeavor even if items come from societies with abundance of coinage systems like ancient Greece. This is true specially for manufactured goods, and specially for Greek painted pottery. The peculiar combination of different stages of consumption of the object, added trade value, and the low cost of raw materials, all this factors are adding up to constantly refuel scholarly debate which now runs for over thirty years. Depending on their calculation researchers estimate value of a standard piece of Great painted ware ranging from being almost completely worthless instead of metal vessels to being a prestigious item and luxurious commodity, to present views of just two extreme ends of the discourse. Furthermore, given that the Greek vases could be found all over Mediterranean their value would change accordingly. Indeed, their trade value is also being assessed with conclusions varying from one which sees vases as being transported as ship’s ballast, a package for other goods, to the one which make pottery production a serious contributor to Greek trade.

In my paper I will present theories and estimations of value of the Greek vases for all the stages of consumption, straight from the kiln up to the present day, where they rest in museums exhibitions. I will give details on how these theories were created, as they often reflect different worldviews and are stretched over four centuries, as well as explain how they reflect on the studies of Ancient Greek culture. The fluctuating value of the vase not only obfuscates proper understanding and placing of object within Greek culture, but it also changes the grounds for interpreting the iconographical message conveyed in the pot. Greek painted pottery consists of enormous cluster of scenes, ranging in hundreds of thousands which are used for studies of the ancient society. The value of the item is often pivotal as it represents the social class for which these objects were made and by which they were consumed and it allows to connect certain ideology with particular set of scenes.

TH1-27 Abstract 11

Materializing worth and value in archaeological beads

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Keywords: Beads, Interpretation, Neolithic Anatolia

Presentation Preference - Oral

Despite moves in recent decades for archaeology to look beyond ‘form’ and ‘function’ for more esoteric meaning in material culture, there are categories of artefacts that are still under-studied and under-theorized in this way, such as beads. Understanding the socio-cultural-economic significance of beads is obscured by their general classification, through typological assessments, as ‘ornamentation’. This implies outward-looking, visually driven social practice with decorative purpose, limiting interpretation of value and worth to societies and individuals. Beads, like any aspect of material culture, do not passively impart their meaning, yet through recognizing only the visual impact of these items in archaeological interpretation, this is what we seemingly expect.

Given the potential for beads to have circulated through society in various ways, as shown through ethnographic examples, it is important that we look beyond this for interpretation of value and worth. In this paper we will address a number of examples from the Neolithic of Anatolia that indicate the drive behind manufacture and use of beads was often not based on aesthetic consideration. The artefacts highlighted are thought to have been relatively mundane objects, manufactured on readily available materials and were not particularly visually arresting, yet their value and
significance can be interpreted from evidence of extreme curation, intense wear, modification and repurposing over the longue durée. New research, primarily, or even on its own, on the typology of these items: their size, shape and a relative weighting of the ‘exoticness’ or economic value of material—would miss this information. Beads can be vessels of meaning, not only vessels conveying meaning and, as material objects, beads are both cultural products and cultural producers, because of the ways in which they may have circulated in the community, driving interaction and sustaining community ties beyond visual signalling.

TH1-27 Abstract 12

More luxury for common people than we thought before: Asian items in medieval and later Europe

Author - Dr. Jeahe, Garson H., University of Bremen, Bremen, Germany (Presenting author)
Keywords: different knowledge and social environments, globalisation and global interacting, perception of Asia in medieval Europe
Presentation Preference - Oral

For a long time the historical and archaeological research accepted the conception that items from Asia which reached the medieval Europe were solely assigned to lordly circles. The reason for this assumption was the focus on outstanding and curious collector’s items in the lordly treasuries and cabinets of wonder. However the archaeological research of the last decades in the whole of Europe adduced numerous of finds in different social environments. My contribution to the congress introduces these items and categories of objects inside their social contexts. With the increase of archaeological excavations the rate of finds continues to rise. That’s why our conception from a perception of the eastern continent in the west changes. Medieval users of suchlike items possessed a potential knowledge, in that case about a distant continent. Thereby it makes no difference if this knowledge was reality or wishful thinking. Often this knowledge concentrated in lordly circles. Nevertheless many of these objects connected with a daily nutrition. The property and frequently use of respective objects in the medieval and later civil society was able to break through the controlling of the knowledge.

Another question weighs the aspects of a globalisation. The existing contacts of the Trans-Eurasian exchanges until the discovery of the maritime route from Europe to India often were selective. Just a few of contacts stretched steadily over the time. Most of them were unilateral, rarely bilateral. One has to question how comprehensive been these contacts inside the Trans-Eurasian exchanges. Which regions had an amount? How tall was a mutual influencing? A higher measure of a mutual interlacing is certifiable. However the notion of a globalisation seems not quite appropriate for this period of history.

TH1-27 Abstract 13

Striking Objects: Comparing the metal used for Roman copper-alloy coinage and domestic artefacts

Author - Dr. Petar, Bray, University of Oxford, Ruislip, United Kingdom (Presenting author)
Keywords: Chemical analysis, Roman Coins, Value
Presentation Preference - Oral

Roman coinage sits at the intersection of a remarkable number of research projects. The art history and iconography of the images stamped on the coins, and the detailed chronology they can create are both full-time specialisms. Coins are used in detailed models of economy, trade, and exchange far beyond the geographical limits of the Empire. As a researcher who spends much of his time studying Bronze Age metalurgy, Roman coins are an astonishing opportunity for examining pellets of copper-alloy that are often stamped with a date, place, and value.

Due to the richness of the data immediately associated with the coins, it is sometimes hard to consider them within the broader context of Roman metal use. This paper highlights new approaches to synthesising and characterising the large corpus of Roman coinage that are often stamped with a date, place, and value. Chemical analysis, Roman Coins, Value

TH1-27 Abstract 14

Moulding meanings. Late Bronze Age valuables through the organisation of metalworking

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Keywords: Craft organisation, Late Bronze Age, Prestige goods
Presentation Preference - Oral

Metalwork from the Late Bronze Age of southern Scandinavia includes a wide range of high-quality prestige goods for personal display, ritual and gift giving. The production of these highly valued bronzes is generally understood as centred by community elites and assumed to have been carried out at exclusive workshop sites. The investment of socio-political and religious power into these prestige objects is thus typically portrayed as an outcome of ritualised and highly exoticised specialised crafting linked to ritual and exclusive settings in aristocratic milieus. This reflects a common notion where exclusive objects are assumed to gain their value in exclusive settings and through exclusive skills. However, tracing the production contexts of prestige goods in the archaeological record shows that the manufacturing of these valuables was staged in many different ways, none of which seem to reflect exclusive and exotic workshops sites. Looking closer at the organisation of production of valuable craft objects shows that crafting events were staged in many different arenas. In this paper I will discuss how the organisation of metalworking can illuminate the creation of power and value of prestigious possessions of Late Bronze Age Scandinavia beyond the assumption of exclusive workshops for exclusive values. I will discuss how (1) the context and staging of production, (2) the intended bearer of the object, and (3) the citation to other objects all worked as important ingredients in the act of producing powerful possessions.
TH1-27 Abstract 17

A stitch in time: Use and reuse of funerary textiles in pre-Modern northern Finland

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Keywords: second use, textiles, value
Presentation Preference - Oral

Between the 13th and 19th centuries in northern Finland a number of individuals were buried beneath church floors. As a result of the unique microclimate beneath these church floors, many of these burials have naturally mummified. This paper addresses these unique contexts at the churches of Hanko and Halko as well as the cemetery at Oulu Cathedral. The unique preservation context offers the opportunity to explore less durable items including clothing, textiles, and other decorative elements. This includes specially constructed "false" robes, socks, gloves, caps. Childer's and some women's burials also include specially-crafted flower wreaths and crowns.

This paper examines the lifecycle of these textiles, including their material and cultural value, use, reuse, interimment and eventual excavation. This sample includes materials crafted from silk, wool, and bast fibers. While some items indicate local craftsmanship, others were obvious imports to the region. Additionally, some pieces suggest professional craft specialization through the presence of luxurious lace and gold thread decorations. Each of these aspects of construction, material use and craft specialization impact the items' cultural and material values. The items included within these burials are further classified into two categories: (1) items intentionally crafted for inclusion in the burial, often recycled from larger textiles and (2) items worn and used by the individual during their lifetime before interimment with the deceased. This paper explores not only the initial value of textiles, but also ways that their use and re-use alters their cultural significance and value within society.

TH1-27 Abstract 18

Valuable pots made with cheap clay.
A biographical approach of the pottery from Sultana-Malu Rosu

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Keywords: biography, Enolithic, pottery
Presentation Preference - Oral

The Enolithic site of Sultana-Malu Rosu (Romania) is well known in the overall framework of the Gumelnita-Kojađerme-Karavanovo VI cultural complex (ca. 4500-3800 BC) due to the large amount of good quality pottery, among which some of the vessels are unique in terms of shape and decoration. These characteristics are the ones that assign value and special meaning for vessels according to both old and new interpretations. However, most of the pottery from this site is represented by common vessels and other thousands of sherds. Also, the site formation has its own identity with the final contexts of the pottery varying from crushed sherds used as temper (grog) to whole vessels assembled in burnt houses or used in mortuary practices.

The aim of this paper is to examine certain stages of the biography of various types of pottery concerning their value both for individuals and the community. Our inferences will be mainly based on the analysis of pottery related to the archaeological record. The close inspection of pottery will include provenance studies based on archaeometric analyzes, identifying manufacture technologies, morphological and typological classification, wear-use analysis, and fragmentation patterns. This approach can establish certain pathways and changes in the vessels' life, addressing various interpretations of the value and meaning of the objects at every stage of their existence.

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TH1-27 Abstract 19

The transvaluation of pottery manufacutres in the Basque Country along the Middle Ages

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Keywords: second use, textiles, value
Presentation Preference - Oral

The patterns of domestic pottery consumption progressively changed over the Middle Ages in the Basque Country. Although some productions present since the 7th Century remained beyond the 15th Century, the ceramic record was completely transformed both quantitatively and qualitatively up to the point that the trend in the ceramic record of the Reformation to the 15th Centuries they have barely any points in common. One of the implications of this process is the change of value of the productions prevailing in the light of the inception of new products, generating a progressive latent transvaluation in the ceramic record. Thus, the new also constantly determined the value of the old.

With this paper, we wish to characterise the transformation of the ceramic record between the 7th and 15th Centuries, understood as a response to a material order established. Among the factors that generated the disequilibrium of this order and its renegotiation, we will analyse the importance of the distribution networks as agents of change in demand, more and more directed at new ceramic products with greater sensorial capacity. The introduction of glazed, painted pottery to the tables of the aristocracy set a new sensory aesthetic that ended up transforming the local productive horizon. An interpretative model would emerge from these considerations that explain the progressive changes to the Basque ceramic record over the Middle Ages as a channeled process. First new products were imported that changed consumption patterns and then technological innovation processes were initiated that resulted in their taking root on a regional scale.

When it comes to understanding the reasons that justify this process of transvaluation of the ceramic record, we will explore the potential of the communicative value of pottery in its social context of use as a key explanatory factor. For this purpose, we will evaluate the role of pottery in the non-verbal processes of communication and its suitability in the social construct strategies of inequality. Lastly, we will evaluate up to what point the diachronic process is produced between the capacity of social action of pottery and the adaptability of the regional production system to the new pottery types enables us to explain the nature of the medieval ceramic register in the Basque Country.

TH1-27 Abstract 20

Interpreting Clay Objects in Neolithic West Asia: Reconsidering "tokens" as early accounting tools

Author - Dr. Barrenas-Chapman, Lucy, Bülent Ecevit University, Zonguldak, Turkey (Presenting author)
Keywords: Neolithic, Token/cray object, West Asia
Presentation Preference - Oral

The Neolithic period in West Asia (c. 10,500-6,000 cal. BC) saw the appearance of the world's first permanent, farming villages. With this development came significant changes in social structure, subsistence activities and artistic expression as villagers experimented with, and adapted to this new way of life. An enigmatic feature of Neolithic settlements is the appearance of small, geometric-shaped clay objects, or “tokens” as they are more commonly known. Clay objects occur in various shapes including spheres, discs and cones, measuring c. 1.50-3.50cm. Initially appearing at a small number of sites in Anatolia, Upper Mesopotamia, the Zagros and the Levant from the start of the Neolithic period, by the Late Neolithic, clay objects are evidenced across the region, often found in hundreds when present at a site. Until recently, clay objects have been overlooked upon frequently, ignored, or dismissed as children’s toys, naturally occurring lumps of clay or mere doodles. More recently Schmandt-Besserat (1992, 1996) has interpreted clay objects as mnemonic “tokens”, the precursors of cuneiform writing yet their crucial appearance and lack of a certain, easily assignable function has contributed to the continued neglect of this artifact type within Neolithic archaeology.

This paper stems from recently completed PhD research. An investigation of the nature, role and function of geometric clay objects within Neolithic West Asia, it demonstrates the difficulty in identifying, categorising and interpreting artefacts in pre-literate societies. Evidence comes from morphometric typological analysis, relational database investigation, and chain of operatore manufacture study, comprising almost 3,000 objects from 79 sites. Analysis suggests that in contradiction to the predominant interpretation of these objects as symbolic accounting “tokens”, part of a formal, enduring, region-wide system (Buchanan- Schmandt-Besserat 1992, 1996), clay objects were multi-functional tools, fulfilling a variety of uses within and across Neolithic settlements. The lack of clay object assemble homogeneity within and across sites where they occur, along with the lack of a certain, singular and consistent function for these artefacts within the wide context of Neolithic West Asia, adds to the difficulty of artefact categorisation. Functional uncertainty leads to problems differentiating clay objects from other small artefacts made from clay, yet of a more certain categorisation (schematic figurines and tablets for example). Perceived value of archaeological finds is inextricably tied to their function, yet when a function, and even the classification of an artefact type is debated, our interpretation of an objects’ value within a past community is easily lost. Their large numbers when present, simple shape, crude appearance and depositional patterning proves "tokens" were quickly and easily made, and disposed of as readily. Yet, Neolithic clay objects were valued, multi-functional artefacts. Even within a single site, comparable objects likely performed multiple roles (e.g. counting tools, information storage mechanisms, gaming pieces, amuletic devices). As tools, clay objects operated with fluidity of function, with imbued value and meaning; a quality which was appreciated and valued.
TH1-27 Abstract 21

Fluid Fungibles: The Politics of Value in Archaeology of the Early Medieval Volga Trade

Author: Dr. Bringley, Inna, University of Oxford, Oxford, United Kingdom (Presenting author)

Keywords: Middle Ages, Trade, Value in Archaeology

Presentation Preference - Oral

This paper will address diverse “regimes of value” which were brought together by the booming medieval trade along the Volga River during the 9th-10th centuries CE. The paper will focus on how value was attributed to different goods and objects in various cultural contexts, and how fungibility of goods was fluid among different trading communities. The latter included the nomads of the Khazar Empire, the Viking Rus, and a variety of local sedentary communities, who lived along the Volga River. While we possess some textual narratives about the Volga trade, its participants, their rituals, goods, and fungibilities, archaeology speaks louder than words in terms of the meaning of value in this trade. By looking primarily at the archaeological context of medieval burial practices, it is possible to see how new meanings (objects and goods) were put to old ends in the process of ritual (burial) action—and in some instances, extracted again. The aim is to show how the politics of value developed during this period of trade and affected the participating communities. The problems connected with archaeological interpretation of these processes will also be addressed.

TH1-27 Abstract 22

Beads, Bells & Baubles: The indigenous Caribbean (re)valuation of Spanish trade goods (c. 1492-1550)

Author: Keenham, Floris, Leiden University, Leiden, Netherlands (Presenting author)

Keywords: Caribbean, early colonial encounters, value systems

Presentation Preference - Oral

This paper juxtaposes archaeological and ethnohistorical sources to explore the early colonial indigenous Caribbean use and valuation of European introduced goods acquired through systems of barter and gift giving. Historical accounts written by Europeanchroniclers describe the indigenous eagerness to obtain novel Spanish goods as well as the pace with which such articles were absorbed into indigenous networks. The cross-cultural exchange of exotic objects affected the convergence, transformation, and recreation of indigenous and European material culture repertoires and value systems. In contrast to the historical accounts, which have always been an invaluable resource for studying the material dynamics of this encounter, archaeological evidence of the abovementioned processes has often been understudied. In this paper, I will discuss early European-introduced materials which have been archaeologically recovered from indigenous contexts in the Greater Antilles, in particular on the island of Hispaniola. With archaeological data it can be revealed how objects of exotic origin were integrated into existing material culture practices, providing clues about their past use and value. Aiming to advance our understanding of the materiality of things in this encounter, I demonstrate how the Amerindian recontextualization and reinterpretation of European trade goods drastically changed the way such objects were valued, and continued to do so once adopted by indigenous communities.

TH1-28 Abstract 01

The bishop’s grave in St. Alban Church in Odense, Denmark

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Keywords: 11th century bishop, Odense, Old bishop - new church

Presentation Preference - Oral

When King Canute was killed in 1086 in the church of St Albain’s in Odense it “… was at that time the bishop’s church…” (‘‘tunc temporis sedes et episcopialis’’). This reference by an unknown author in a commemorative text of King Canute the Holy indicates that St Albain’s church functioned as a bishop’s cathedral until 1095, when the king’s body and St Albain’s relics were transferred 75 metres to the newly built St Canute’s church. In the fall of 2015 Odense City Museums excavated a hitherto unknown bishop’s grave in St Albain’s, supporting the designation of St. Albain’s as a cathedral in 11th century. This period of the foundation of the Danish Church, and a number of questions emerge when analyzing the bishop as well as the grave and its context. The paper will primarily address two questions: What are the origins of the bishop in the grave and with which archbishopric and/or kingdom is he most likely associated? In the beginning of the 11th century, the Danish Church had close relations to Canterbury and thus to the Anglo-Saxon Church. In the middle of the 11th century, ties were close to the German Church, and Danish bishops were appointed by the archbishops of Hamburg-Bremen. Attempts to answer these questions are based on traditional archaeological methods as well as DNA and strontium analyses. Additionally an attempt will be made to explain why the bishop was not moved into the new cathedral together with St Albain’s relics and Canute the Holy in 1095, or in connection with, for example, Canute’s canonization and translation only five years later in the year 1100.

TH1-28 Abstract 02

An abundance of chapels: the pre-parochial religious landscape of the Isle of Man

Author: Johnson, Andrew, Manx National Heritage, Douglas, Isle of Man (Presenting author)

Keywords: early chapels, Isle of Man, landscape

Presentation Preference - Oral

Taking its cue from the relatively well documented small-church landscapes of the North Atlantic Islands – Greenland, Iceland and the Faroes as well as the Western and Northern Isles of Scotland – this session also aims to discuss also the religious landscapes of Scandinavia, Britain and Ireland and welcomes papers addressing comparable cases and questions in other parts of medieval Christendom.
The Isle of Man is a small island of just 580 square kilometres, yet it boasts the remains of about 200 medieval chapels (in Manx Gaelic, ‘healas’). In the 1930s Carl Marstrander, the leading Celtic scholar of his day, visited the island to study its many Celtic cultural and linguistic facets. Marstrander was intrigued by the widespread distribution of early medieval burial grounds and chapels, which predate the establishment of a parish system on the island during the 12th century. He proposed and published a highly-influential thesis that the distribution of these chapels was associated with a pre-existing land division system which functioned throughout the island. Several theories have since been advanced which have suggested alternative explanations for the distribution of these chapels, and have been based, for instance, on concepts of peripheral or central location. It is worth taking stock of these, and of Marstrander’s work, in the light of recent discoveries and new dating evidence for some chapel sites, not all of which were known at the time of earlier surveys. Together, the development of GIS and the resulting ability to investigate and characterise historic landscapes, offers an entirely new opportunity to study the location and distribution of these chapels, particularly in relation to routes through the landscape. As a result, it is becoming possible to propose some new ideas about their location and about the nature of the medieval religious landscape of the Isle of Man.

**TH1-28 Abstract 03**

A landscape of belief: Orkney’s medieval churches

**Author:** Dr. Gibbon, Sarah Jane, University of the Highlands and Islands, Kirkwall, United Kingdom (Presenting author)

**Keywords:** church, landscape, Orkney

**Presentation Preference:** Oral

Over two hundred churches were founded in Orkney in the eleventh and twelfth centuries. This paper will explore the various functions of these churches by considering them in their landscape contexts as a means of overcoming the lack of contemporary written sources relating to them. The churches can be grouped according to three different landscape settings: proprietary churches located in close proximity to central places within settlement units (townships); isolated churches located some distance from known settlements; and chapels that were created and operated from settlement focus but not isolated. In addition to identifying different types of church, a new approach to chronology and religious development withing the Orkney Early Christian period will be presented, mapping the transition from the forced conversion of the islands by Olaf Tryggvason in 995 to the creation of an urban diocesan centre, part of the newly created archdiocese of Nidaros, in 1152/3.

**TH1-28 Abstract 04**

Chapels, Church sites and Settlement in Medieval Faroe Islands

**Author:** Arge, Simun Vilhelm, Faroese National Heritage, Tórshavn, Faroe Islands (Presenting author)

**Keywords:** chapels, church sites, settlement

**Presentation Preference:** Oral

In the Faroe Islands there are ecclesiastical sites that by tradition or place name are associated with Manx (Faroese for chapel). The lack of historical and archaeological data has made questions regarding the date and function of these sites difficult to answer. Nevertheless they have been used e.g. in explaining when and by whom the Christianisation was introduced. Only one of the sites has partly been excavated in the 1960s, and only two other sites had been archaeologically surveyed before 2013. To get a better understanding of the variety of ecclesiastical sites the Faroese National Museum started a surveying project in 2013. The aim is to create a platform for future archaeological work and to create a basis of comparative archaeological data to use locally and across the North Atlantic region.

The methods used in the project are a combination of topographical surveying, Georadar survey and archaeological test excavations. The topographical mapping is made by a combination of Structure from Motion (SfM) and Methodologies (DSM). The collected data are analysed, visualised and compared in an ArcGIS environment. This paper will present the preliminary results of the project.

**TH1-28 Abstract 05**

Novel topographical surveys and analysis of ecclesiastical sites in the Faroe Islands

**Author:** Michelsen, Helgi Dal, Faroese National Museum, Hóvvík, Faro Island (Presenting author)

**Keywords:** early churches, ecclesiastical landscape, North Atlantic

**Presentation Preference:** Oral

In the Faroe Islands there are ecclesiastical sites that by tradition or place name are associated with Manx (Faroese for chapel). The lack of historical and archaeological data has made questions regarding the date and function of these sites difficult to answer. Nevertheless they have been used e.g. in explaining when and by whom the Christianisation was introduced. Only one of the sites has partly been excavated in the 1960s, and only two other sites had been archaeologically surveyed before 2013. To get a better understanding of the variety of ecclesiastical sites the Faroese National Museum started a surveying project in 2013. The aim is to create a platform for future archaeological work and to create a basis of comparative archaeological data to use locally and across the North Atlantic region.

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**TH1-28 Abstract 06**

The geography of a cemetery – the early Christian cemeteries of Skagafjörður, North Iceland

**Author:** Zoega, Gudny, Skagafjörður Heritage Museum, Saudarkrokur, Iceland (Presenting author)

**Keywords:** burial customs, cemeteries, churches

**Presentation Preference:** Oral

In the last decade early Christian churches and cemeteries in the region of Skagafjörður, North Iceland, have been the object of extensive archaeological research. A thorough regional survey has suggested the possibility of at least 120 farms with early churches/cemeteries. Of those, 15 have been further examined and four have been extensively excavated. This research indicates that these cemeteries come into being around the date of the official conversion to Christianity in AD999/1000 and that their majority was discontinued just before or after AD1110. A small number ultimately evolved into parish or communal cemeteries and in some instances churches retained their function and boundary walls were rebuilt after the cemeteries were no longer being used for burial. In their outward appearance these cemeteries appear to have been remarkably similar in size and form suggesting that from the outset, they were being managed and structured according to a particular set of laws or customs. Burial customs that have been considered an 11th-12th century development, for instance sex segregation, also seem to have been in place right from the beginning of the 11th century. These cemeteries are adding a new dimension to our understanding of the early ecclesiastical landscape in Iceland and how and when important changes may have occurred. In this paper I will explore the differences and similarities that can be found in the layout and organisation of these cemeteries and how they compare with contemporary funerary data from outside Iceland.

**TH1-28 Abstract 07**

Hofstaðir in Mývatnsvatn. An early Icelandic religious landscape

**Author:** Dr. Gestsdóttir, Hildur, Institute of Archaeology, Reykjavík, Iceland (Presenting author)

**Keywords:** church, Iceland, religion

**Presentation Preference:** Oral

In 2015 the excavation of the early Christian church and cemetery at Hofstaðir in Mývatnsvatn, northern Iceland, was completed. The site which dates from the mid 10th to the early 12th century was typical for the early Christian cemeteries of the period in Iceland, several phases of a central church surrounded by typically Christian graves, inhumations oriented west-east, all without gravegoods. What is noteworthy however is that only 100m away from the church and cemetery are the remains of a substantial Viking age feasting hall (excavated between 1995-2002). The hall, which has clear pagan symbols, not in the least that its exterior was decorated with at least 23 cattle skulls, was in use for a relatively short period, constructed in the late 10th century, and abandoned by the mid 11th century.

This Christian church and the pagan feasting hall at Hofstaðir were therefore contemporary for a while. This brings a new perspective to the discussion of early religion in Iceland, where much of the focus has been on attempting to identify a conversion process thorough the archaeology, in particular burial archaeology. The story suggested by Hofstaðir is quite different, where there seems to be a period of coexistence of these contrasting religions.

In this presentation the results of the two excavations at Hofstaðir will be discussed, and placed within the context of the archaeology of early religion in Iceland in particular, and the North Atlantic in general.
TH1-28 Abstract 08

Communities of death in medieval Iceland

Author: Prof. Vikeáskótt, Orr, University of Iceland, Reykjavík, Iceland (Presenting author)

Keywords: church, Iceland, Medieval

Presentation Preference: Oral

In Iceland, the introduction of Christianity around 1000 AD was associated with fundamental changes in burial customs. In pre-Christian times each farm had had its own cemetery but under the new custom only about a half of the farms had churches with cemeteries. Farms without a church and cemetery are as a rule those of lower status and their occupants presumably buried their dead either in their neighbours’ cemeteries or (if different) in the cemetery of their patron or landowner. Already within the first century of Christian practice the small farm-based churches began to lose their number and the 12th and 13th centuries are characterized by their continued decline and by increasing centralisation of functions in churches which would eventually become parish centres. The paper will explore how this development, from private to communal cemeteries, reflects fundamental changes in community organisation and social structure.

TH1-28 Abstract 09

"Small churches" in Norse Greenland – what became of them?

Author: Dr. Arneborg, Jette, Danish National Museum, Copenhagen, Denmark (Presenting author)

Keywords: Churches and church-farms, Norse Greenland, reorganisation of ecclesiastical landscape

Presentation Preference: Oral

Greenland was settled in the later part of the 10th century when Christianity had been introduced in northern Europe. Christianity was a part of the settlers' kit, and churches and churchyards were built on the farms from the very beginning of settlement. The churches were built close to the farmhouses, and they were characterised by their "secular" architecture, small size, and a surrounding circular, or sub-circular, enclosure. During the 13th century the early churchyards were taken out of use, as were apparently the church buildings, and a number of farms lost their status as church farms. In the same period new and larger churches were built either on earlier church farms or on newly established ones, now adapting "traditional" church building architecture known in Scandinavia. Based on archaeological excavations of "small churches" 2001 – 2010 I will explore the changes in Norse Greenlandic church building in the context of ecclesiastical and community organisation.

TH1-28 Abstract 10

A World apart? Burial rites in a Scottish Carmelite friary

Author: Hall, Derek, Stirling University, Perth, United Kingdom (Presenting author)

Keywords: Carmelite, leather shoes, wooden staff

Presentation Preference: Poster

Ongoing excavations of the site of the medieval Carmelite friary of Tullibron in Perth, Scotland in advance of its redevelopment have located at least 300 human burials in the friary church. The earliest group of these burials are consistently buried with wooden "staffs" which are apparently not functional objects but symbolic and two of the other burials were found to be wearing leather gloves. The churches were built close to the farmhouses, and they were characterised by their "secular" architecture, small size, and a surrounding circular, or sub-circular, enclosure. During the 13th century the early churchyards were taken out of use, as were apparently the church buildings, and a number of farms lost their status as church farms. In the same period new and larger churches were built either on earlier church farms or on newly established ones, now adapting "traditional" church building architecture known in Scandinavia. Based on archaeological excavations of "small churches" 2001 – 2010 I will explore the changes in Norse Greenlandic church building in the context of ecclesiastical and community organisation.

TH1-29 Abstract 01

Rocking the Cradle of Scotland

Author: Prof. Driscoll, Stephen, University of Glasgow, Glasgow, United Kingdom (Presenting author)

Keywords: 3D animation, Excavation, Museum

Presentation Preference: Oral

The Cradle of Scotland was a museum exhibition generated by the 10-year long research project into the archaeology in the heart of Scotland, the Strathkarrow Environments & Royal Forthovit project (http://www.gla.ac.uk/schools/humanities/research/archaeology/search/projects/serf/ ). Although opened at the 2015 EAA Annual meeting in Glasgow, it was oriented to a popular audience which could not be expected to be familiar with technical archaeological evidence. The project was a multi-period study including landscape survey and numerous excavation and has generated data spanning 5000 years. In order to engage with a range of audiences and communicate different kinds of information we drew upon a techniques including the reproduction of artefacts, the recreation of a Bronze Age burial, scale drawings of sculpture produced life size, 3D digital animatations of sculpture scans and detailed paintings illustrating key moments in narratives of different sites.

The exhibition provided a great stimulus for interpreting the site and allowed us to work with a range of and interpretative artists, from traditional archaeological illustrators to re-enactors and digital designers. The exhibition generated a series of striking and successful representations of the discoveries. This paper provides the first public opportunity to reflect on questions about authenticity, accuracy and accessibility raised by these efforts following their exposure to audiences. This paper also constitutes a step in critical process leading to the final exhibition publication of the results of the study.
One way in which archaeological research can reach back and experience some parts of ancient life is through attempts to reproduce former conditions and circumstances. By using reconstructions, visitors of archaeological open-air museums can experience what the meaning and importance of these objects was for their original creators and owners. Therefore, using reconstructions is an important tool for understanding the past. The archaeological open-air museums have the role of providing an interpretation of how people lived and acted in the past. These museums hold collections of archaeological reconstructions, which can be presented in several ways, such as in form of reconstruction, oral presentations or in form of virtual reality. This can occur both in physical form and in intangible form. Each different form has its own character and method for transferring the knowledge of the past to the public. Every form has its own function or significance, and some forms are more complete than others. Often these reconstructions are necessary to make the information of the original such as drawings and plans understandable for visitors. This is due to the visitors often not being able to interpret the information themselves. The presentation in form of reconstruction can, moreover, convey a sense of realism, since not only sight but also other senses are triggered during a visit to a reconstruction.

An archaeological open-air museum is a permanent non-profit institution. It is characterized by outdoor true to scale architectural reconstructions and representations of how people lived and acted in the past. It holds collections of intangible heritage resources and provides an interpretation of how people lived and acted in the past. This is accomplished according to the visitor's understanding of the presentation. Reconstructions can, moreover, convey a sense of realism, since not only sight but also other senses are triggered during a visit to a reconstruction. Reconstructions work theoretically from a museological perspective. The research will give an insight into the different types of archaeological reconstructions. This can occur both in physical form and in intangible form. Each different form has its own character and method for transferring the knowledge of the past to the public. Every form has its own function or significance, and some forms are more complete than others. Often these reconstructions are necessary to make the information of the original such as drawings and plans understandable for visitors. This is due to the visitors often not being able to interpret the information themselves. The presentation in form of reconstruction can, moreover, convey a sense of realism, since not only sight but also other senses are triggered during a visit to a reconstruction. Reconstructions work theoretically from a museological perspective. The research will give an insight into the different types of archaeological reconstructions. This can occur both in physical form and in intangible form. Each different form has its own character and method for transferring the knowledge of the past to the public. Every form has its own function or significance, and some forms are more complete than others. Often these reconstructions are necessary to make the information of the original such as drawings and plans understandable for visitors. This is due to the visitors often not being able to interpret the information themselves. The presentation in form of reconstruction can, moreover, convey a sense of realism, since not only sight but also other senses are triggered during a visit to a reconstruction. Reconstructions work theoretically from a museological perspective. The research will give an insight into the different types of archaeological reconstructions. This can occur both in physical form and in intangible form. Each different form has its own character and method for transferring the knowledge of the past to the public. Every form has its own function or significance, and some forms are more complete than others. Often these reconstructions are necessary to make the information of the original such as drawings and plans understandable for visitors. This is due to the visitors often not being able to interpret the information themselves. The presentation in form of reconstruction can, moreover, convey a sense of realism, since not only sight but also other senses are triggered during a visit to a reconstruction.
TH1-29 Abstract 06
The "Arty" Way - Dutch Approach to the Presentation of Archaeological Heritage

Author: Dr. Kocken, Marc, MARC heritage consultants, Bemmel, Netherlands (Presenting author)
Keywords: Interpretation, reconstruction, visualization
Presentation Preference - Oral

Aim of this paper is to present a new approach in the Netherlands and discuss its pros and cons with the international community in order to contribute to the ICOMOS Debate on Permissibility and Standards for Reconstructions of Monuments and Sites and to answer some questions asked in the session proposal.

Early 2013 an online survey was presented by the ICOMOS ISICIP to gather information within the ICOMOS community to start a debate on permissibility and standards for reconstructions of monuments and sites. This debate was called upon during the 17th ICOMOS General Assembly in Paris noting the increasing disregard of existing theoretical principles for the justification of reconstruction, and a need towards significant commercialization of reconstruction activities.

To contribute to the debate, I will present the Dutch approach on the subject of reconstruction with a specific focus on the archaeological heritage.

In contrast to most European countries, there is in the Netherlands no tradition in physically reconstructing archaeological sites due to the lack of visible substance. In 1999 a National policy document examining the relationship between cultural history and spatial planning, was presented. Under the influence of this policy, progress was made to present the archaeological heritage to the public. Due to the lack of visible substance a more artistic approach developed - with landscape architects, designers and planners in the lead - that can be described as the "arty" way of reconstructing/presenting the archaeological heritage on site. In the context of this paper I will elaborate some examples of third dimensional outdoor presentations in combination with in situ conservation of archaeological remains, such as House Moerenburg in Tilburg.

These examples show an inspired design that makes the archaeological heritage both physically and mentally livable and adds to the identity, social significance and contemporary use of the place.

Two important lessons learned for success:
- There has to be a multi-disciplinary and participatory approach during the whole process in which heritage experts play a significant role, and Dilemmas - such as What past to present? Where to put the emphasis, in the preservation of archaeological values or in the development of a place? Whose interest is being done right and to what extent? How much authenticity may be lost? - have to be discussed at the beginning of a project.

TH1-29 Abstract 07
Illustrating 8,000 years of environmental change and human impact in the Areuse River Delta

Author: Lic. phil. I Krause, Jeannette, Office du Patrimoine et de l’archéologie du canton de Neuchâtel, Hauteville, Switzerland (Presenting author)
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Co-author(s): Rempaz, Katherine, Office du Patrimoine et de l’archéologie du Neuchâtel (OPAN), Hauteville, Switzerland
Keywords: environmental change, human impact, reconstruction drawings
Presentation Preference - Oral

The delta of the Areuse River lies between the foot of the Jura Mountains and the north-western shore of Lake Neuchâtel in Switzerland. Reconstructions were carried out there between 1995 and 1998 prior to the construction of the A5 motorway. Before this, knowledge about human history and palaeohydrology in the delta was very limited. After preliminary soundings proved positive, a major research programme was set up that involved a team of some twenty archaeologists and specialists from the earth and life sciences.

Test-pitting and trenching across two-thirds of the width (1.3 km) of the upstream part of the delta, followed by excavations and the detailed documentation and sampling of the complex stratigraphies, have revealed a remarkable history of alluvial change and human occupation that covers the last 11,000 years. Over forty palaeochannels have been identified, dating from the Preboreal (c. 9,000 BC) to the post-Medieval period, and since the Middle Neolithic most channels were found to contain archaeological remains.

Five reconstruction drawings representing the alluvial plain of the Areuse River during the Older Atlantic period, the Middle Neolithic, the Late Bronze Age, the Roman period and the Early Medieval period were created in order to illustrate the synthesis of the interdisciplinary study. The aim of these drawings is to visualize the evolution of environmental change and human impact in the study area over a period of 8,000 years. The presentation will focus on the criteria applied during the preparatory phase of the drawings to select the archaeological periods to be portrayed and the choices made relating to the depiction of such features as angle of view, geographical scope, season, types of vegetation and human activities. In addition, the underlying environmental and archaeological data taken into account will be discussed as well as the issues of uncertainty and impression pertaining to these data, or absence of information. Finally, the composite drawing techniques used for the creation of these illustrations will be explained.

TH1-29 Abstract 08
Virtual Communication at the Great Medieval Castrum Tunsberg

Author: Archaeologist Gustavsen, Cecilia, Slottsfjellsmuseet, Tunsberg, Norway (Presenting author)
Co-author(s): Fahre, Lena, Slottsfjellsmuseet, Tunsberg, Norway
Keywords: Digital communication, interpretation, Reconstruction Presentation Preference - Oral

Restoration, Kunsthistorisches Museum, Cortona, Tuscany, Italy (Presenting author)

Virtual communication at the great medieval Castrum Tunsberg

TH1-29 Abstract 09
The Art of Perception in Archaeological Visualisations

Author: Wilson, Kelvin, Kelvin Wilson, Ridderkerk, Netherlands (Presenting author)
Keywords: Illustration, interpretation, phenomenology
Presentation Preference - Oral

When in the year 79 violent tremors pointed to something big about to happen near his house on the Gulf of Naples, Pliny the Younger nevertheless continued reading his book - and in the heat of the day, dozed off. It is a rather mundane reminder of our view of history finds direction by what we think important, yet that even past lives were lived by individual - and to past people, very present - concerns.

Most of the smaller human experiences of the past seems lost to us, yet other sensations are thought tied to places, and are recreated in landscapes and architecture. Indeed, a building may successfully copy plenty of details of a past design. Yet an enthrilled visitor could have only ever had one perspective; a building’s interior scale determined by its walls, the appreciation of its exterior too often by the weather (and one person never under the spell of both at the same time). A tired Roman visiting his local baths house at the end of the day would need to know where to store his clothes, hope to find a seat in the crowded steam room, and be able to find a sponge - and not at all ponder the mechanics of the floors and drains as a present day architect might do first.

Phenomenology, or sensory interpretation, was suggested over twenty years ago by professor Christopher Tiley as a useful technique in helping understand ancient sites. Though understandably considered subjective, the same is now well understood to be undermining its very opposite: reconstructions made to the dictate of data. To bring the two opposites together - whether in full-scale architectural visualisations, as reconstruction art in the media, or in future multidimensional developments - the central issue is to ask a plain question: “what did one need to know!”?

There are instances where the answer has altered the interpretation of the archaeology - bringing back the focus to what might not have truly occupied the mind of a person in the past, or merely pointing out the best place he might have left that sponge. The discrepancies between visualisations, with on one side multi-period sites being ‘read like a plan’ and reconstructed accordingly, and opposite the ‘one moment at a time’ view visual artists may help re-experience, were discussed in a series of English Heritage-funded workshops and conferences at the University of Southampton. This paper expands on statements and case studies made by the author there and in follow-up meetings.
Interpreting the Archaeological Record

THI-29 Abstract 10
As Planned, as Built, as Found: Reconciling Written and Field Records at Ksar es-Seghir (Morocco)

Author - Elbi, Martin Malcolm, Portuguese Studies Review / Baywolf Press, Peterborough, Canada (Presenting author)

Keywords: Islamic, Portuguese, Morocco, Ksar es-Seghir, methodology, reverse mapping, GIS, validation of data

Presentation Preference - Oral

The present study reflects the results of a multi-level forensic analysis of architectural written records, archaeological field data (pre-2000 and post-2000), and competing interpretive models (pre-digital and digital) relating to the colonial urban outpost of Ksar es-Seghir (Morocco). The primary written record baseline was extracted from a fresh critical paleographic reading (edition forthcoming) of the protocol of survey recorded in 1514 CE by a Crown-appointed team of Portuguese architects, administrative agents, and military engineers (Arquivo Nacional da Torre do Tombo (Lisbon), Nápoles Antigo 769). This baseline material was then set in the context of all other relevant written records, structural proposals, funding appropriations, Crown instructions, and other documents (1458 - 1549) germane to spatial and structural modeling of the locality. For broader context, the results were correlated with an area-wide (Strait of Gibraltar) analysis of related sites (partly forthcoming as “Keys to the Strait: Fortifications in the Strait of Gibraltar from Abd al-Qadir Ygaf to Abd al-As-sen RT”, in Stéphane Pradines, ed., Architecture militaire duittoral, de la conquête Arabe à l’Empire Ottoman (Cairo: IFAO, 2016) and partly published as “Contours of Battle: Chronicles, GIS, and Topography – A Spatial Decoding of the Portuguese Siege of Tangier, September to October 1437”, Portuguese Studies Review 21 (2) (2013, rel. 2016): 1-135 (Portugal and its Empire, 1128-1809: A Volume of Papers in Honour of Francis Dutra J.). The resulting dataset was correlated, iteratively, in detail, and from a variety of critical perspectives, with data generated by past archaeological projects (1970s and 1980s) that had commenced with the 1974 field season, as well as with data resulting from the post-2010 resumption of work at the site under the auspices of CHAM / Escola de Arquitectura da Universidade do Minho and of the Direction du Patrimoine Culturel (Morocco). In the final stage, the project then proceeded to engage critically with various interpretive traps, possible omissions, likely flaws, or failures of coherence detectable in existing models of the locality (Ksar es-Seghir) as products of the long-run inter-disciplinary research covering Ksar es-Seghir. The goal was to shed light on the variety of processes through which diachronically cumulative errors of interpretation or modeling traps may arise. The conference presentation seeks to highlight issues of methodology and procedure, particularly with regard to interpretation, reconstruction, and resulting overall visualization.

THI-29 Abstract 11
Reconstructing the Form of Late Neolithic Rondels

Author - Dr. Klára, Jarošová, Institute of Archaeology CAS, Prague, Praha, Czech Republic (Presenting author)
Co-author(s) - Varečka, Petr, Institute of Archaeology CAS, Prague, Praha, Czech Republic

Keywords: Enclosures, Neolithic, Virtual reality

Presentation Preference - Poster

The poster will present features of a circular ground plan, so called rondels, the function of which is assumed to be socio-ritual that appears in the Central European area in the first half of 5th millennium BC. Nowadays, we can only record the subterranean parts – i.e. one to four ditches, and one to three inner palisade trenches. Based on an intensive research that has been going on for almost 40 years, the ideas of the original form of rondels including wooden construction parts have changed in some aspects. The most common view is that a rondel is a solid palisade enclosure further enclosed by ditches. There are two, three or four entrances to the centre of the rondel. Some researchers believe that from the centre of the rondel it was possible to observe the movement of the Sun, the Moon etc. during special occasions (e.g. summer and winter solstice). However, is this prevailing opinion right? What would rondels with several ditches look like if there were parallel mounds or ramparts between them? Is there a possibility that there might have been buildings or other structures in the middle of the rondels? What would rondels look like if they had a roof above the central area? The poster will present some original alternatives of rondel virtual reconstructions based on archaeological excavations.

THI-29 Abstract 12
From archaelogy to the restoration: the reconstruction of tile stoves in the New Jerusalem

Author - Glauznova, Olga, Institute of Archaeology of RAS, Moscow, Russian Federation (Presenting author)

Keywords: 17th century, New Jerusalem Monastery, the reconstruction of tile stoves

Presentation Preference - Poster

Workshops of the New Jerusalem Monastery are deservedly considered as one of the main sources of Russian production of the tile. During the excavations of recent years it was discovered a huge number (over 50,000) of previously unknown stove tiles. The tile workshops, kilns, stocks of finished products and remains of standing ovens were excavated. A lot of stove tiles were found near the base of these ovens. Patriarch Nikon laid the foundations of a tile business in Russia. He invited artists from different regions and from other countries. Among ovens of the 17th century, we see the ovens, the roots of which can be found in Northern Europe, Italy, different regions of Belarus, in the Trinity-Sergius Lavra, Moscow. Later New Jerusalem craftsmen formed their own original style with special local appearance of tiles. At the beginning of the 18th century Peter I sent two Swedish prisoners for the organization of the tile production in the New Jerusalem. They, apparently, were the authors of tiles with symbolic scenes. Of particular interest is the oven, lined with heraldic church and state subject.

All of the above have created unique conditions for the reconstruction of the tile decoration of the New Jerusalem ovens of 17th – the beginning of the 18th centuries. Archaeologists and restorers implemented 16 projects. All ovens were reconstructed on the historical foundations during the restoration of the monastery buildings. Reconstructed ovens allow to present real interiors of 17th – the beginning of the 18th centuries in detail.

THI-29 Abstract 13
3D modeling, RTI: non invasive and non contact methods for documenting a stamped amphora from Padova

Author - Toma, Francesca, Università di Padova, Padova, Italy (Presenting author)
Co-author(s) - Ceres, Filippo, Università di Padova, Padova, Italy (Presenting author)
Co-author(s) - Galeazzi, Gian, Università di Padova, Padova, Italy
Co-author(s) - Vavrečka, Petr, Institute of Archaeology CAS, Prague, Praha, Czech Republic

Keywords: 3D modeling, open-source, RTI

Presentation Preference - Poster

This work aimed to develop a non-invasive and non contact approach for studying a stamped Dressel 6B amphora from an urban excavation in Padova (Italy). We created a 3D model of the amphora using two methods of acquisition, laser scanning and photography, and processed with an open-source 3D modeling software (MeshLab) and an image-based 3D modeling software (Agisoft Photoscan). Then we focused on the stamp on the rim of the amphora, taking a number of vertical photos to be processed with the opensource software RTIBuilder. We got a PTM file viewed with the RTIViewer, which permits to observe the images using various rendering modes. The realistic and measured 3D model of the amphora let archaeologists to analyze diagnostical parts, i.e. handles, neck, rim, the position and dimension of the stamp, in typological and technological researches. Moreover, the RTI image permits us to get a clear image of the shape and the letters of the stamp, useful for who is carrying studies on stamps and amphora workshops, without handling the object.

Further applications for both 3D models of amphorae and RTI images of stamps might be the creation of open online databases of amphorae and stamps from the Mediterranean; measured and scaled reproductions of amphorae using 3D printers, to be used for archaeological educational purposes.

204
EVALUATING THE IMPORTANCE OF OSSEOUS TOOLS IN THE EARLY HOLOCENE: A EUROPEAN PERSPECTIVE

Friday, 2 September 2016, 09:00-13:00
Faculty of History, Room 214

Author: - Co-author(s): -
Co-author(s): -
Keywords: -
Presentation Preference: -
Co-author(s): -
Author:

THE IMPORTANCE OF OSSEOUS TOOLS IN THE EARLY HOLOCENE: A EUROPEAN PERSPECTIVE

The session “Evaluating the importance of osseous tools in the Early Holocene: a European perspective” is meant to deal with a wide range of topics related to the analyses of osseous material. Apart from classical approaches, especially technology and typology, we would like to integrate the results from other disciplines and approaches to discuss from a European perspective. For instance, archeozoology or use-wear analyses on bone and lithic tools can also be considered as crucial to a better understanding of the role osseous industries played in Early Holocene communities. This session will also be the occasion to debate taphonomic issues and various contexts of discoveries which influence the archaeological visibility of this group of tools. Consequently we encourage researchers to address these and comparable questions from their own perspective and contribute to our session.

TH1-30 Abstract 01
Evaluating the importance of osseous tools in the Early Holocene

Organic tools are an important aspect of prehistoric societies, especially in the Stone Age. Therefore the analyses of these can give deep insight into people’s typological and technological constraints such as behaviours. Being widely available in hunter-gatherer communities osseous materials have to be considered as one of the main resource for tool production in the past.

However, in a European scale, the discovery of objects made with bone, antler and tooth is very irregular. Obviously, these contrasts are related to taphonomic issues but also to economical and cultural aspects.

The session “Evaluating the importance of osseous tools in the Early Holocene: a European perspective” is meant to deal with a wide range of topics related to the analyses of osseous material. Apart from classical approaches, especially technology and typology, we would like to integrate the results from other disciplines and approaches to discuss from a European perspective. For instance, archeozoology or use-wear analyses on bone and lithic tools can also be considered as crucial to a better understanding of the role osseous industries played in Early Holocene communities. This session will also be the occasion to debate taphonomic issues and various contexts of discoveries which influence the archaeological visibility of this group of tools. Consequently we encourage researchers to address these and comparable questions from their own perspective and contribute to our session.

TH1-30 Abstract 02
Evolution in bone exploitation during the Late Mesolithic at Zamostje 2 (Russia)

Author: - Co-author(s): -
Co-author(s): -
Keywords: -
Presentation Preference: -
Co-author(s): -
Author:

In Central Russia, perhaps more than in other places in Europe, bone industries are one of the most important components of the last hunter and fisher communities. During the Late Mesolithic (7000-6500 B.C.), bone equipment holds an essential place in the everyday life of these societies (Logozovski and Logozovsky, 2003). Past typological studies have long stressed the importance of such productions (Lozovski, 1996, 1999; Vinnik, 2001). Nonetheless, a more technological approach has to be undertaken, and the characteristics of the technical traditions linked to the bone equipment have to be detailed. The material connected to the elk (Alces alces) debitage at Zamostje 2 offers the opportunity to do so (Lozovski et al., 2013; Logozovski et al., 2014). Throughout this period, communities mainly hunted elk (Chark, 2003, 2009). Their skeletons were then used to produce blanks. However, according to the way of life of these groups, they seem to gradually change their technical features by stopping to use breaking by direct percussion for the benefit of breaking by indirect percussion and grooving techniques. This aspect should suggest interesting technical evolutions between the first and the second half of the Late Mesolithic, via a more important management of the osseous production. By comparing this data to other categories of material, it is possible to observe some fascinating technical and economical shifts around 6500 B.C which in turn illustrate some conceivable social evolutions at this time.

TH1-30 Abstract 03
Inserts from early Mesolithic bone projectile heads and daggers in Central Russia

Author: - Co-author(s): -
Co-author(s): -
Keywords: -
Presentation Preference: -
Co-author(s): -
Author:

Pre-boreal and early Boreal post bone sites in the Volga-Oka interfluve produced a number of slotted bone arrowheads, javelin heads and daggers. Some of them preserved flint inserts in situ in slots fixed with glue. From typological point of view the majority of them are unretouched regular microblades. Some are trimmed with fine retouch along one lateral side. Scarcely obliquely truncated microblades were used as barbs in arrowheads. Microscopic studies of these inserts preserved in slots of composite weapons showed distinct use-wear traces. Inserts of projectile heads expose more or less developed edge damage in the form of fine chipping supplemented by rounding and abrasion of the edge and scarce linear traces. Such use-wear resulted from hitting some soft medium dirty material (skin and flesh of hunted animals) and sliding along harder tissues and bones. Rounding, abrasion and single coarse linear traces emerged either from occasional hitting the ground when an arrow missed the target, or from contacts with other arrows. Traces from hitting the ground are also observed at points of slotted bone projectile heads. Inserts of daggers exhibit edge damage in the form of fine to crude and very crude chipping. Sometime edge of an insert is completely crushed. Lightly developed “fract” polishing is observed at both dorsal and ventral faces in the shape of a narrow area running along the edge of the insert. Such use-wear indicates various butchering activities, first of all detachment of a body of large mammals. During this procedure huge efforts were applied to the butchering knife, and contacts with bones, sinew and cartilage were often. Linear traces are scarce. They are in the form of strips of oriented polishing or shallow scratches which emerge from contacts of inserts with bones and hard tissues when chipping of inserts edges happened. Use-wear at the end of bone slotted daggers showed that they were used for both stabbing and cutting some soft medium dirty material (skin and flesh of hunted animals) at different angles. Observed use-wear suggests that composite daggers were used as modern hunter’s knives combining a stabbing weapon and a butchering tool. Distinct types of use-wear observed at inserts preserved in situ in bone projectile heads and daggers will help to identify such inserts in lithic inventories of Mesolithic sites.

TH1-30 Abstract 04
The biography of an Estonian Mesolithic slotted bone dagger

Author: - Co-author(s): -
Co-author(s): -
Keywords: -
Presentation Preference: -
Co-author(s): -
Author:

Stabbed bone tools are a common feature of the Mesolithic in Northern Europe. However these objects, like many osseous tools, are almost exclusively found in wetlands and therefore often have little or no contextual information, which poses significant issues when attempting to study and understand these objects. Therefore too often they languish under-researched in museum collections. In this paper we present the results of a multi-methodological analysis of the pre- and post-depositional life history of the Ubi dagger, an Early Mesolithic ornamented slotted bone dagger from southern Estonia. This dagger is unique in Europe as the only dagger with possible anthropomorphic figures. Before this analysis, very little was known about this dagger. It had been found during peat digging in the 1900’s with no associated Mesolithic finds and had only been typologically dated to the Mesolithic. By using a combination of different scientific methods the dagger went from an isolated, undated, and unique object to a tool with a complex life history extending more than 9000 years.
TH1-30 Abstract 05

Interpreting the Archaeological Record at Hohen Viecheln, Germany

Author: Dr. Groß, Daniel, Centre for Baltic and Scandinavian Archaeology, Schleswig, Germany (Presenting author)

Co-author(s):- Lübke, Harald, Centre for Baltic and Scandinavian Archaeology, Schleswig, Germany

Keywords: bone tools, site resignation, stratigraphic dating

Presentation Preference - Oral

Excavated in the 1950s, Hohen Viecheln 1, Lkr. Nordwestmecklenburg, is one of the most striking sites of the early Mesolithic in the Northern European Lowlands. The abundance of finds and good organic preservation characterise the site, which is located north of Lake Schwerin in eastern Germany. Among German scholars, Hohen Viecheln is ranked alongside Bedburg-Königshoven, Fressach, Duvensee, Mullerup, and Star Carr, but internationally it usually is not accorded this significance. This relative obscurity seems even more surprising, given the abundance of finds made from different raw materials, but it is grounded in the site’s research history.

In this presentation we will present first results of an ongoing research project on Hohen Viecheln which aims at clarifying the pre-Brunton techno-complex. By this it will be possible to adequately position the site within the Mesolithic and add valuable chronological and technological information to the understanding of osseous tool development in the Early Holocene. The re-evaluation also allows the accurate dating of the numerous bone points, for which the site is known.

The modern re-evaluation also renders possible to solve problems on the stratigraphic sequence. Due to the fact that the site represents a former shore area of the modern Lake Schwerin its stratigraphic sequence with different layers of peat, sand and gyttja is typical for overgrown lakes. The direct dating of several artefacts therefore allows us to understand when different areas were settling up.

TH1-30 Abstract 08

Osseous tools in the Mesolithic and Neolithic in the Iron Gates

Author: Dr. Selena, Vitezović, Institute of Archaeology, Belgrade, Serbia (Presenting author)

Keywords: bone and antler, experimental archaeology, taphonomy

Presentation Preference - Poster

The Iron Gates region is particularly interesting, because the presence of both Mesolithic and Early Neolithic sites enables analyses of traditions and innovations in raw material selection, technological choices, etc. Related to rich finds are published in more detail for the sites in Romania. This paper will focus on the Mesolithic and Neolithic sites from Serbia (Kula, Velenjska, Krippâlica, etc.). Technological and typological data will be discussed: raw material selection, manufacturing techniques, etc. Harpoons were the dominant raw material throughout the Neolithic period and their importance continues into the Early Bronze Age.

TH1-30 Abstract 06

Bone tools in the Paris Basin Mesolithic

Author: Post-doc, Guéret, Colas, Nanterre, France (Presenting author)

Keywords: bone industry, Mesolithic of Paris Basin, use-wear analysis of lithic tools

Presentation Preference - Oral

In contrast to the Upper Palaeolithic period, it is widely admitted that bone industries have played a minor role in the economy of Mesolithic societies of Northern France. This fact is based on the scarcity of osseous tools andibalaza waste discovered in the settlements and the spectacular decrease of lithic burins and bines generally associated with bone and antler working. Nevertheless, for a long time, the archaeology of Mesolithic in Paris Basin has only excavated dry-land contexts where organic materials were not preserved. Since 30 years, rescue archaeology has allowed us to discover well-preserved sites in the valleys, evidence of bone industries is now increasingly numerous, even if the data is still rare. In addition, in the last few years, the development of use-wear analysis of lithic tools gives us new informations about the place occupied by osseous materials in the economy of Mesolithic groups. This communication will be the occasion to make an assessment about the available data from bone technology, archaeozoology and use-wear analysis. When all the approaches are brought together, the place occupied by bone tools seems to be a more complicated question than previously thought. Taphonomic issues, as well as mobility patterns of Mesolithic tribes, have to be considered in order not to underestimate the role of antler, bone and teeth in the daily life of hunter-gatherer communities. Finally, we will compare the situation in Northwestern Europe with neighboring regions, in particular to the Maglemosian techno-complex, well known for its abundant bone industry.

TH1-30 Abstract 09

Post-depositional alterations on the bone surfaces – experiments with different agents of abrasion

Author: Mgr Orlovska, Justyna, Nicolaus Copernicus University, Toruń, Poland (Presenting author)

Keywords: bone and antler, experimental archaeology, taphonomy

Presentation Preference - Poster

Taphonomic issues are one of the most important factor that must be concerned during study of every archaeological bones or osseous artefacts. Especially, if our analyse is subordinated to technological or use-wear traces. Identification of human or nonhuman modifications is then crucial. Weathering, trampling, tooth marks, root etching or sedimentary abrasion are just the examples of possible nonhuman destroying agents. The main goal of presented study was to understand and describe changes resulting from the different kinds of sedimentary abrasion (among others bioturbation and movement in an aqueous setting) on the bone surface. The experiments related to the study have been divided into two main parts. One was connected with modifications observed on raw bone surfaces. The second one, with degradation raised on processed bone surfaces (among others scraped, polished) and their possible influence on the morphology of observed traces.

TH1-30 Abstract 10

A replication of Neolithic bone harpoon with engraved concentric circles from Šventoji, W Lithuania

Author: Gaidauskas, Lukas, Vilnius University, Vilnius, Lithuania (Presenting author)

Keywords: bone working, experimental archaeology, Stone Age

Presentation Preference - Poster

This poster presents an experimental study which was designed to replicate the manufacture of a bone harpoon with a certain type of engravings using only the tools and materials available for the Subneolithic societies at the environmental setting of the eastern Baltic. The harpoon with a pattern of concentric circles engraved on it was found at the site Šventoji 6, which is a refuse area in the west of an ancient laggonal lake and is dated to the end of 4th millennium. While concentric circles were widely used in bone and antler tools and ornaments in different chronological and geographical contexts, there are no analogies for the find from Šventoji 6 from the same period even in the neighbouring regions. The problem is that this type of engraving is mostly associated with metal tools, which could have appeared in the region only in the Bronze Age, after 2000 BC. The foreign origin of the harpoon with concentric circles is confirmed by another find from the same site - a worked piece of bone, on which the manufacturer tried to imitate the same decoration of concentric circles, but instead produced polygons with a dot in the center, which look nothing like the engravings on the harpoon. However, a clue for the engraving of concentric circles before the appearance of metals comes from a certain type of Paleoindian stone tools in North America, the single- and double-scribe compass gravers. If it is supposed to try to replicate the harpoon using similar stone tools and then compare it to the production of the same artefacts using metal tools.
**TH1-31 Abstract 01**

**On the nature of Baltic impact in elaboration of eastern European enamel style in Dnepr region**

**Author:** Dr. Khmialtova, Olga, IA RAS, Moscow, Russian Federation (Presenting author)

**Keywords:** Eastern European enamel style

**Presentation Preference:** Oral

Lecture reviewed a problem of Baltic impact in formation of eastern European enamel style in Dnepr region. It can be considered - Oral

- through the analysis of stylistic and jewelry tradition. Multiple elements inspired by artifacts made in Roman provinces. Central European cultures and Baltic lands can be seen in morphology and decoration of ornaments from Central Dnepr:

- Strong profiled ornamental elements found in contact zones of Baltic lands, in artifacts dated to the beginning and the mid-3rd

- Among artifacts, composing a jewellery assemblage from the so-called circle of East European (“barbarian”) enamelled ornaments there are items that are sometimes interpreted as neck-rings.

- According to peculiarities of shape and ornament the array of “diadems” was divided into three main and two additional types. Their mapping shows that the main types are local. All copies of the type 1 come from the Baltic region, mainly from the western part of the East European forest zone to southern forest-steppe and steppe territories. The majority of the type 3 ornaments are found in the Middle Dnieper region and on the Dnieper left bank. Perhaps, this distribution can also be extended in the north, it may be indicated by specific finds in the upper reaches of Berezina and the middle reaches of Western Dvina. Recently artifacts from the circle of East European enamelled ornaments, including fragmented “diadem”, have also been found in the Upper Dnepr region, items of this type are known up to the end of the 2nd – 3rd centuries.

- The report is prepared on the RGNF project No. 14-01-00269.

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**TH1-31 Abstract 02**

**About two areas of adorning with champion enamels hoards**

**Author:** Doctor in hab. Obotomskii, Andrei, Institute of archaeology of Russian Academy of Sciences, Moscow, Russian Federation (Presenting author)

**Presentation Preference:** Oral

Adornments with champion enamels of the East European style are dated to the end of the 2nd – 4th centuries. Its area covers all Eastern, part of Central, and Northern Europe. There are 2 areas of hoards with these adornments: Western (the Dnieper and Upper Oka river basins) and Eastern (the Upper Don area). In Western area 10 hoards are known (Michigorye, Moshchina, Borina, Glazhew, Bryansk Region, Sheshino and others). The artifacts in these complexes have certain stylistic unity. In the majority of the hoards female attire of different preservation level are presented. There are artifacts of men’s subculture of prestige (Bryansk, Novokolom’, Moshchina). The belts from Kraisky Bor are unique, but they make a single ritual or ceremonial set. These artifacts were used as intended by their owners before they came to hoards. The majority of adornments in these hoards relate to the middle stage of enamel style development. Artifacts of degradation stage were found in two complexes (Moshchina and Bryansk) together with them. Thus, all the 10 hoards belong to the same chronological period. In the wide framework they are dated to the end of 2nd – 3rd centuries, in the narrow – about the middle of 3rd century. In the Dnieper area attire with enamel adornments belonged to Late Zasukhinsky and Kievan population. All hoards were found in the area of Kievan culture or near its border (Moshchina). Thus, the Dnieper hoards area is directly related to Kievan culture. In Eastern area 4 hoards were found (Zhuravka, Parkovets, Zamyanino-Yuryevo, the Laboratory district). Three of four complexes are hoards of scrap metal for recasting. It is unknown, which population used adornments with enamels in the Upper Don area. As well as in Western area complexes, the majority of artifacts from Don hoards relate to the middle stage of enamel style evolution. In the same complexes adornments of the degradation stage were also found. In Don hoards, as well as in Dnieper/Oka complexes, hinged bracelets, “Okha” tubular, single late Sarmatian and Central European artifacts are known. So Don complexes belong to the same period, as Dnieper/Oka hoards. Western area hoards are complexes of female dress accessories sets and items of men culture of prestige. The Don hoards are complexes of handicraftsmen raw materials. The two territorial groups are essentially different. The mass spread of adornments with enamels in the Don area may be explained by attacks of this region population on the Dnieper/Oka territory. The Don population was not interested in adornments, but in scrap metal. Perhaps, these attacks were also the main reason for hoards holing in Western area. The Upper Don region was attacked by the third force soon after these campaigns, therefore, the Don hoards were hidden. This force could be the groups of Chernyakhov culture population. As a result of their

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**TH1-31 Abstract 03**

**“Diadems” from the East European world of enamelled ornaments**

**Author:** Dr. Rodinkova, Vlasta, Institute of Archaeology Russian Academy of Sciences, Moscow, Russian Federation (Presenting author)

**Presentation Preference:** Oral

Among artifacts, composing a jewellery assemblage from the so-called circle of East European (“barbarian”) enamelled ornaments there are items that are sometimes interpreted as neck-rings. In our opinion, shape, size and location in burial allow to consider these things as ornaments of the head, perhaps not headbands but “diadems” used in combination with high hairstyle or over a headdress. Today not less than 33 whole and fragmented exemplars are known. Excluding one find, they have no enamel inserts, but are decorated with embossed and engraved geometric patterns.

The report is prepared on the RGNF project No. 14-01-00269.
Interpreting the Archaeological Record

TH1 Abstract 06
Glass vessels of the Chernyakov culture – technology and origin

Author: Likhter, Julia, Archaeological research in construction business, Moscow, Russian Federation (Presenting author)
Keywords: ancient glass, chemical composition, manufacturing technique

There are different kinds of glass vessels – the study of the manufacturing technique allowed to single out 13 schemes of making vessels which are connected with workshops of various types. It allows us to identify the places where the goods under investigation were manufactured. Glassmaking workshops where grind objects were produced were situated in big Empire towns. Vessels hot decoration were made in the common glass-house workshops which were situated somewhere in Empire.

TH1 Abstract 07
The commemorative gifts or immolating of items? (The New materials of Hun-Sarmatian time from the territory of Kazakhstan)

Author: Dr. Bogdanov, Evgeniy, Institute of archaeology and ethnography SB RAS, Novosibirsk, Russian Federation (Presenting author)
Keywords: ritual ceremonies, burial gifts, Mangyshlak Peninsula

A few stone constructions were investigated at the territory of Mangyshlak Peninsula (Republic of Kazakhstan) in 2014 – 2015. The space inside of stone fence contained the traces of varying ritual ceremonies: crushed crockery, vessels, embedded into the earth, and calciferous alters. In addition, the one small pt contained the bridle kit, another one – the belt kit consisted of incrustate items, and the third – the remains of saddle (silver margins and details of garniture). All components of material complex correlate with items of 5 – 6 centuries, found at the territory from Danube to Southern Ukraine. At the same time, the planigraphy and character of construction indicate the Sarmatian range of sites. An article considers the findings in association with theory of ‘burial gifts’ among the Huns, offered by I. Bona, P. Tomka and supported by A.V. Komar. We made the case, which evidenced the appearance of developed cults, associated with sacrificial gifts of prestige items in Caspian Sea region.

The formation of these rider rituals are in account with nomads, who came to the new territory together with Hun invasions of West and South.

TH1 Abstract 08
Controversial problems of studying early medieval hoards in the Middle Dnieper region

Author: Doctor Shchedrjina, Olga, Institute for the History of the Material Culture, St. Petersburg, Russian Federation (Presenting author)
Keywords: Hoards of metal ornaments, individual attire, interpretation of archaeological sources, Middle Dnieper region

Hoards of metal ornaments for a long time have been considered the sole archaeological source of the third quarter of the 1st millennium AD in the Middle Dnieper. After the discovery of settlements and cemeteries study hoards become secondary. Objective circumstances of the past 20 years, namely:

- The lack of systematic scientific field research as the settlements and cemeteries 7-8 centuries AD on the territory of the Middle Dnieper region
- Uncontaminated spread of exotonic works with metal detectors led to the facts that:
  1. The perception of saturation monuments of this time non-ferrous metal was radically changed - the number of findings has increased many times.
  2. The context of the finds of metal items is immediately lost, they are removed from the complexes and the cultural layer.
  3. The only complexes in which can be credibly traced co-occurrence of artifacts are fixed treasures.
  4. The accuracy of the information about the origin of these findings is low, but in some cases verifiable. The accuracy of the information about their composition is low too, they can be falsified. The completeness could be different from disparate up to fully taken.

We have accounted for about 100 complexes treasures of various origins. The following conclusions can be drawn on the basis of their study:

- The amount non-ferrous metals, which were in use, are very large. However, gold is not represented at all, and silver is poor-quality. In the complexes deposited or an individual attire, male or female, or a number of them, belonging to a small group (maximum 5-6 individuals). At the same time there are complexes with unpaired things and scrap. Deposition of these hoards was
not "hiding treasures". The "wealth" of these complexes is alleged. Unification of the composition of a set of ornaments reflects the overall homogeneity and "egalitarianism" of material culture in the third quarter of 1st Millennium in the region in question. On the basis of these materials, it is impossible to draw a conclusion neither an "elite" nor the "Potestarian structure". The existence of such a usage (a cultural norm), as a mass deposition of the elements of ceremonial costume in hoards, is a sign of the cultural unity of the ancient community. This community can not be correlated with "Attale" described in written sources.

But the most important questions still remain unresolved: Were hoards complexes of prolonged accumulation? How can be characterized the deposition of hoards (gradual, one-time, deliberate, etc.).?

What compelled to deposit the sets of elements of the traditional ceremonial dress in a plurality of treasures?

What led to the evolution of the "treasures of arts" (containing ornamental, jewelry, belt ends, buckles as well as specific pottery forms) apply to the investigation as well. Most of the discussed burial complexes were discovered during excavations performed in the historical East Prussian districts of Sambia and Natanga on the flat burial sites Borshoy Issakovo (former Lautch), Schossanevo-1 and and are published for the first time.

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TH1-31 Abstract 09

Sites of the late stage and the end of the Imenkovo culture in the Middle Volga region

Author - Dr. Vazyov, Leonid, Institute of Archaeology named after A. Kh-Khakhlov, Tatarstan Academy of Science, Kazan, Russian Federation (Presenting author)

Keywords: early medieval archaeology, Imenkovo culture, Middle Volga region

Presentation Preference - Oral

The issue of defining the time and circumstances when the one of the largest early medieval archaeological cultures of the Eastern Europe ceased to exist is the most debatable one for the archaeology of the Middle Volga region. For years of Imenkovo culture studies, several completely opposite hypotheses on this issue were developed. The majority of the hypotheses are of historiographical interest, but the issue still remains debatable. According to various researchers, the cessation of existence of Imenkovo culture is related either to the leaving of population from the region at the end of the 8th - the beginning of the 7th c. (Alexey Bogachev) or at the end of the 7th c. (Evgeniy Kazakov) or to the slow dissolution in the culture in the early Volga Bulgarian culture in the 8th-9th centuries (Galina Matveeva, Yuri Seremly).

As a result of the recent research, it became possible to determine at least two stages of the Imenkovo culture: the early one in the 4th-5th c. and the late one dated 6-8th c. The chronological framework of the last stage was determined according to details of heraldic-style belt-sets, Sassanian coins, several furniture and costume details.

The analysis of the collections allowed to determine the late Imenkovo materials from Komitom 2 burial ground and Maklasheevka archaeological complex in trans-Volga area, "Osh-Pando" hilfort in the Middle Sura region. These sites are very similar in culture and dated 6th - the first half of the 7th c. The common feature of this group is the mix of classic Imenkovo cultural complex with "eastern" artefacts.

The synchronous group of sites that is culturally distinct was researched in the Ulyanovsk region. Cremation burials of Komarovka burial ground contained relatively rich material of the 6th-7th c. The ceramics and artefacts found in the site have visible traces of the "southern western" direction of cultural ties.

The hilforts "Asna-Panda" and "Shomn" in the Middle Sura region are related to the "final" stage of the Imenkovo culture. The both of the sites are the second half of the 7th c. (the beginning of the 8th c. is also possible). These sites have a significant difference in ceramics and artefacts, therefore, the Imenkovo population was inhomogeneous at the "final" stage.

The materials of the late Imenkovo sites have a clear local specifics conditioned by different directions of cultural relations. It is possible to define stable local variations of culture only on the late stage of the Imenkovo culture. The specific regional types of furniture and costume details and differences in ceramic complex appeared in the 6-7th centuries bear an evidence of this.

The cessation of existence of Imenkovo sites in the different regions was taken place in different periods, possibly, due to different reasons. In the majority of regions with Imenkovo culture remains, the upper boundary does not exceed the first half of the 7th century. However, sites in the western part of Imenkovo area remain later, probably even until the beginning of the 8th c.

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TH1-31 Abstract 10

A new view on the chronology of fibulae of Dollkkeim/Kovrovo type in the light of new research data

Author - Dr. Prassolov, Jaroslav, Institute of Archaeology (Presenting author)

Keywords: Dollkkeim/Kovrovo type, Kaliningrad, Russian Federation

Presentation Preference - Oral

Further development of the existing fine chronology of one of the most characteristic find categories - fibulae, remains an important task in the archaeological research of the Iron Age Sambian-Natangian culture (also known as the Dollkkeim/Kovrovo culture) in the south-eastern part of the Baltic Sea basin. Actual investigation focuses primarily on the verification of the chronological frame of fibulae of Dollkkeim/Kovrovo type. For this purpose presumed mutual occurrence of several fibulae types as well as other characteristic artefacts (i.e. chronological markers) in the burial complexes are discussed in detail in the articles. The transition from the Late Roman period to the Early Migration period and the diachronic typological tendencies within the framework of the later period are demonstrated by means of the comparative analysis results of the so-called big crossbow fibulae, characteristic for the Late Roman period/the very beginning of the Migration period, the so-called fibulae with the star-shaped foot, fibulae of type Schönwarling/Skowarcz and Dollkkeim/Kovrovo, which are found in the cremation graves in the area of Sambian-Natangian Culture starting from the Early Migration period. Comparative analysis results of further chronological markers of the periods in question (knife-daggers, shoulder straps, jewelry, belt ends, buckles as well as specific pottery forms) apply to the investigation as well. Most of the discussed burial complexes were discovered during excavations performed in the historical East Prussian districts of Sambia and Natanga on the flat burial sites Borshoy Issakovo (former Lautch), Schossanevo-1 and and are published for the first time. 
The presentation is going to discuss results of our research, in which we explored the possibility that we can draw conclusions about the development of a particular cultural group indirectly from information about a certain settlement. It will also define possible dates of their settlement. It shall present a possible interpretation of events in the 6th century in the western Pannonia (i.e. north-eastern Slovenia) and propose a new hypothesis on dating the early Slavic settlement in the afore-mentioned region.

The general consensus among scholars is that the early Slavs did not settle in the area of the western Pannonian Plain prior to the departure of the Lombards into Italy, possibly after 568, but probably only around 580 or later. The historical interpretations in question were proposed mainly on the basis of written sources, since the material evidence for this area was absent. However, the discovery of large quantities of new material, above all from the Ukraine, has radically changed and extended our knowledge of the early Slavic settlement in the western Pannonian Plain already occurred in the first half of the 6th century. These conclusions were based on three lines of evidence: 1) the study of the pottery; 2) dates obtained from the analysis of the radioactive isotope of carbon 14C; and 3) comparison with the spread of the allegedly contemporaneous Lombard settlement north of the Danube and in the Pannonian Plain.

The main argument that supports the possibility of early Slavic settlement in the first half of the 6th century is the Lombard colonization of Pannonia and its archaeologically proven gradual pace to the line Szentmihely–Kezheľ–Páčz and later colonization of central Slovenia. Unexpectedly, the area between Pannonian settlement and Central Slovenia, i.e. north-east Slovenia, was left unsettled by Lombards. Since the lowerland settlement of indigenous Romanized inhabitants in the 6th century was still not discovered, it is strongly believed that Lombards encountered the early Slavic settlement west of the above-mentioned line. A further argument for the hypothesis is the archaeologically proven fact that both early Slavs and Lombards respected the borders between areas of their settlement north of the Danube, which is also supported by 14C dates.

Keywords: center and periphery, cultural interaction, historical ethnic groups

**Abstract 1**

Cultural exchanges between Barbaricum and Roman Empire in Lower Danube Region

**Author** - Dr. Magureanu, Andrei Mircea, Institute of Archaeology Vasile Parvan, Bucharest, Romania (Presenting author)

**Co-author** - Dr. Ciupercă, Olimpiu, History and Archaeology Prahova County Museum, Ploiești, Romania

**Keywords** - center and periphery, cultural interaction, historical ethnic groups

**Presentation Preference** - Oral

It is a long discussion about the influences between the Romans and barbarians, last one understand as the other. The Lower Danube area brings its contribution to this debate, even till now the main discussion was based only on the discoveries from Middle Danube, there being no evidence of power of gepids, avars… and here, in today South and East Romania, being just a not so attractive periphery, a sclavin one. Is this image true? Can a periphery excluded from this kind of discussion? Are important cross-cultural exchanges only between centers of power? How can we track cultural interaction? What can be considered as an import? What are the ways that facilitate this kind of human interaction? Is it only an elite privilege or all the community participates into these cultural exchanges? Those are only a few of the questions to be analysed into our contribution.

Analyzing the discoveries known today as (Ploiești–Câmpulung–Câpriu) and Costăcic–Bogoljubina–Hancu Cultures, dated in the 6th – 7th centuries A.D., we intend to see the interaction both on a larger scale – eastern and middle Europe, but, also, to a micro-scale, particular the east and south Romania, trying to see also the forest and the trees.

**Abstract 15**

Barbarian Coins, Elite Identities and the Birth of Europe

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**Keywords** - Coins, Gothic, Imitations

**Presentation Preference** - Oral

A commonality of the cultures of “Barbarian” northern and Eastern Europe was the production of coins imitating the issues of the Roman Empire. Analysis of die-linked coins (i.e. struck from the same die and thus produced in the same workshop) has long demonstrated that there were wide-ranging exchange networks across much of the northern “Barbaricum” during the Roman and Migration periods. Furthermore, both official Roman coins and imitations, as well as their imitations, played an important role in the development of the presentation of the barbarian elites. However, the discovery of large quantities of new material, above all from the Ukraine, has radically changed and extended this picture: we now know that the phenomenon was much more widespread and intensive than had previously been appreciated, and that such networks in fact stretch from Moldova and the Ukraine to Scandinavia. The new material allows us to produce a narrative that can be closely linked with the rise of the Gothic Kingdom and its subsequent displacement in the face of the Hunnic invasion.

The numismatic material is the subject of a 3-year joint DFG/NCH Beethoven project “IMAGMA. images maiestatis” by the University of Warsaw and the Römisch-Germanische Kommission that aims to understand how these imitations of Roman coins were produced and used by the developing elites right across the northern and eastern “Barbaricum” to demonstrate their status. The picture that is emerging is one of disparate groupings linked together by common elements of material culture and of a wide-ranging exchange network, but above all of the crystallisation of the Gothic power centre on the territory of the Chernyakhov/Sintiana delMures Culture.

The coins not only paint a diverse and deep-ranging picture of how such elites saw and expressed their identity, both with reference to Rome and to each other. They also provide new and revealing insights into the interaction and communication between the northern and eastern barbarians, in particular the Goths on the one hand, and the imperial administration and the population of the provinces of the Roman Empire in Late Antiquity on the other.

**Abstract 16**

A Barbarian, meaning who?

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**Keywords** - Identification, Relationship and influence, Romans and Barbarians

**Presentation Preference** - Oral

In late antiquity, due to a change in social relations inside the barbarian societies, perception of Barbarians themselves changed as well. As a result of the intensification of contacts which less and less frequently took a form of a one-sided diktat, the late-antique community was by no means monolithic, conscripting the ethnically and religiously alien elite groups. It resulted in a serious re-orientation of mutual interest and to working out a new model of mutual relations. This change resulted in taking over certain cultural behaviours and was reflected in the material culture. All that, at least in the Danube area took place in the shadow of newly-organized system of fortifications, which can be considered a characteristic feature of the late-antiquity warfare. The war itself, on the other hand, was the factor which bonded particular barbarian populations, which made them create permanent state organisms.

The paper includes deliberations concerning changes in perception of the Barbarians by the Romans in late antiquity and their mutual relations, exchange in cultural models and war as a factor shaping contemporary populations.

**Abstract 17**

Burials with weaponry of the upper Dniester version of the Zarubintsy culture

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**Keywords** - upper Dnieper, weaponry, Zarubintsy culture

One of the specifics of the upper Dnieper version of the Zarubintsy culture making it different from the Pohyle and middle Dnieper versions is a custom of placing weaponry in a grave. On the burial ground Chaplin 14 spear and dart heads (5%) were found in 282 burials, on Yurkovichi in 1 out of 19 (5.3%). On the burial ground Goroshkov spearheads have been found in six investigated burials out of 32. All the heads are of iron, socketed, with a leaf-like feather, and bear traces of having been in fire. On the outside of the socket of one of the heads of the Goroshkov burial ground (burial No.9) there are prints of fabric preserved. In Goroshkov the heads lay in different parts of the burial pit parallel to it. In most cases, the burials with weapons, apart from模式ed bowls, contained horsehoe-like iron fibulae of syngyma type and (or) iron knives with hunched bases. What is more, the knives always lay with the point directed to the side opposite to that of the spearhead.

A unique element for the funeral rites of the Zarubintsy culture is an iron spearhead stuck almost vertically into the bottom of the burial pit with the socket facing upward (burial No.13 of the Goroshkov burial ground). The custom of dressing weaponry or labor implements through the remains of the burial person placed in an urn or a pit is widely distributed territorially and chronologically. It is noted in the Przeworsk and Jastorf cultures of Poland and Germany where it sporadically occurs in the late La Tene and Roman times. Similar cases are known also in the late Celtic burial grounds of the Danube zone. The vertical piercing (shining) of a spearhead into a burial pit had apparently some ritual or magical significance.

This custom is interpreted variously. On the one hand, there is a rich mythology existing about spears that pierce the vault of heaven and thereby give humans access to the sky. On the other hand, the weapons were driven into the remains of the buried man
in order to bind the deceased to the ground and prevent him from leaving the grave. Finally, this custom is viewed upon as a reflection of phalic cult symbolizing the re-fertilization of Mother Earth. Also for the first time for the Zandobrany culture an iron scabbard of a sica, a battle knife, and the spiked head of a Scythian arrow (burial No.30) were found in Goroshkov. On the basis of the finds of various versions of fimbriae of the middle and late La Tene scheme, the burials with weaponry of the upper Dnieper version of the Zarubintsy culture are dated to the late 4th to early 3rd century BC. In general, the burial Goroshkov can be characterized as a monument left by a militarized group of people at the turn of our era.

**TH1-31 Abstract 18**

Geoinformation methods in dealing with East European barbarian champlevé enamels

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**Keywords**: Champlevé enamels, Geoinformation methods

**Presentation Preference** - Poster

In the last decade the objects made with champlevé enamels have attracted the attention of many researchers once again. Increased volume of incoming information from different regions of East Europe has expanded significantly the current understanding of the spread of this category of things, its connection with different cultures and its history. The source corpus by G.F. Korzukhina (1978) reflected the situation of the early 1970s. About 450 objects divided into 10 categories (Brooches, Bracelets, lunula-pendants, Chains, Plate items, Neck-rings, Charms, Linings, Rings, etc.) were taken into account in this corpus. In the Middle Dnieper region 173 of 184 findings came from “casual” context: 69 finds were made in the excavation of graves and from private collections of the locals. Only 11 items were found during excavations. In the second part of the book devoted to the surrounding regions, the situation is slightly different: 192 items were found in the excavations, 74 were related to the “casual” finds. Totally 69 places with the finds in the Dnieper region were recorded. The author of the source corpus identified three regions where things with enamels spread: Middle Dnieper, Baltic and Volga-Oka regions. In addition to the G.F. Korzukhina’s corpus new one was prepared by R.V. Terpilovsky and A.M. Oblomsky (2007). It included 142 findings mostly from the Middle Dnieper region.

Thus, even on the example of existing source corpus it is obvious that a significant part of the findings is not related to the archaeological excavations. At present the accumulation of sources is irregular. So in the Baltic region new finds are rare and are related to archaeological researches, while in the territory of Ukraine, Russia and Belarus number of known finds has increased significantly. Vast majority of items was found due to the massive looting of archaeological sites. This process has been going since the late 1990s-early 2000s. Nevertheless over the past 10 years hundreds of things in museum’ collections have replenished range of enamels. Regular work on fixing findings is carried on in a number of regional museums.

At present day we have information on more than 2,000 items. Such study full database (source corpuses by Korzukhina et al.) continues. New approaches in work with undocumented finds allow including them in statistical survey. The first results of such work allow eliminating the G.F. Korzukhina’s hypothesis about three areas of distribution of objects with enamels. The newest mapping finds existing gaps in the Upper Dnieper region, on the left bank of the Dnieper, in the Neman region. The amount of finds in the Middle Don region has increased significantly. Many things from the right bank of the Dnieper and Western Ukraine became known. New categories of things unknown among a set of categories in Korzukhina’s book were allocated. Number of items in previously small categories of things significantly increased. Information from full database allows beginning the work on allocation regional and interregional series of things, based on statistically valid samples of items.

Work was financed on RGNF grant N14-01-00289

**TH1-31 Abstract 19**

Neck-rings of the ‘emamelled style’ in the South Eastern Baltic Area and in the Dnieper-Oka region

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**Keywords**: Dnieper-Oka region, South Eastern Baltic Area, East European enamelled ornaments, Torques neck-rings

**Presentation Preference** - Poster

Amongst different types of East European enamelled ornaments, the neck-rings (torques) made of three twisted wires and with ring-shaped ends, are a conservative stuff category. In the South Eastern Baltic Area, these are known from stray finds (Taurage) and from burial complexes (Malžonys, Verbliai). In the Dnieper-Oka region, such neck-rings originate from hoards (Moshchin, Myzhigo’ye, Glazhevo, Ushak). Amongst the neck-rings of the Malžonys burial ground, there is a specimen cut in two—what could serve as a piece of evidence of ‘killing’ the stuff. In three hoards from the Dnieper-Oka region, cut neck-rings are known, too. The latter could indicate the sacrificial or votive character of the hoards of enamelled ornaments.

**TH1-31 Abstract 20**

Cross-cultural interactions in the light of wheel-made pottery from the cemeteries in Ulow (Poland)

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**Keywords**: the Wiebark Culture cemeteries, Ulow, SE Poland, wheel-made pottery

**Presentation Preference** - Poster

In the vicinity of Ulow (Middle Roztocze, SE Poland) the complex of multicultural archaeological sites was found. Among them two bi-cultural cemeteries (site 3 and 7) originating from the late Roman Period and the early Migration Period were discovered. On the map of archaeological cultures, Ulow is located in the settlement zone F of the Wiebark Culture. Therefore, the features typical of this culture dominate over the cemeteries discovered in Ulow. However, no fewer is the number of features of funeral rite, location of the site, as well as grave goods possessing parallels in other cultural units from the European Barbaricum (e.g. Marcinowice Group, Chełmno Culture). It is known that the Wiebark Culture has a small number of wheel-made pottery. Moreover, it has not yet been proved that the population of this culture produced such a ware (apart from one episode from Weklice). According to many archaeologists, wheel-made potteries from the Wiebark Culture sites are in most cases imported from the Chełmno/Chełmno–Sztynort or Murow Cemeteries. In the light of this fact, surprising is the extraordinary number of wheel-made pottery and its fragment discovered in Ulow. In site no. 7 they comprise more than a half of ceramic ware from the Roman and Migration Periods. In this case, it can not be ruled out local production of at least part of the wheel-made pottery beginning at the phase Cbl-C2 and connecting the ornamentation of hand-made Wiebark Culture pottery with the technology and morphology of wheel-made pottery characteristic for the Chełmno or Sztynort–Chełmno Cemeteries.

**TH1-31 Abstract 21**

The heyday and decline of settlement of the Przeworsk Culture in the Lublin Region, eastern Poland

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**Keywords**: interdisciplinary studies, Przeworsk Culture, settlement reconstruction

**Presentation Preference** - Poster

The disappearance of cultures stemming from the tradition of the Roman Period at the territory of Central and Eastern European Barbaricum emerges as a diverse process in time and space. For the most part of this territory, among others also for the territory of Poland, the existing literary records a ‘sudden and dramatic’ fall in the number of sites associated with the cultures at the end of the 4th and at the beginning of the 5th centuries. Such view of the cultural and settlement evolution is presented in the last synthesis of the prehistory of the Polish territory, written some years ago, as well as in more recent fragmentary studies. The last years of the 20th and the first decade of the 21st century brought a number of significant discoveries for the archaeology of the Roman Period in the Lublin region (east of Poland), which brought numerous new materials, sometimes leading to crucial redefinition of the established views.

The state of the research allows us to distinguish in this part of Barbaricum not only settlements connected with the Wiebark culture but also the final phase of the Przeworsk culture which transpires from recent excavation carried out at a settlement in Nieszawa Kolonia, site 5, Opolje Lubelskie district.

This site is the largest archaeologically explored settlement of the Przeworsk Culture in the Lublin Region with relics of dwelling constructions. The dating of the majority of artefacts and features uncovered in Nieszawa Kolonia can be placed within the phases B2 and B2/C1-C1a of the Roman Period. One can however also mention a whole set of metal and ceramic artefacts pointing the functioning of this Vistula river bank settlement in the late Roman Period and early Migration Period, that is, at the time of phase C3 (or still the final stages of phase C2) and phase D1, which puts the problem of the decline of settlement of the Przeworsk Culture in the Lublin Region in a new light.

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**Interdisciplinary studies carried out in Nieszawa Kolonia systemically fulfilled the still up-to-date postulates of the internalisation of studies over settlements of the Przeworsk Culture.**
TH1-31 Abstract 22

The preparatory stage of pottery technology among the Russian forest-steppe cultures in IV-VII AD

Author - Nikitina, Anna, Samara State Technical University, Samara, Russian Federation (Presenting author)

Keywords: ancient pottery, East European Plain, Migration period

Presentation Preference - Poster

The time of the Migration period in the area the Eastern-Europe forest-steppe is associated with the spread the "cough-molded" flat-bottomed non-design ceramics. At this time in the tradition abolishes advanced technology associated with Scothian elements and imitations of Roman ceramics, as well as leaving the specifics of Iron Age sedentary cultures. The Migration period pottery is simpler and largely unified, despite the fact that the complexes of findings, social and economic characteristics of different cultural groups are different.

Consideration area includes series of archaeological cultures: Prague-Korchak, Petlenko, Chernyakhov (in part), later Kiev and Kolochino, Mooshchino, culture of Volga Finns, Imenkov. Studying of Eastern-Europe forest-steppe sedentary cultures ceramics as a single phenomenon has not been conducted, but there are a some works in separately. The main part of the special researches about ceramics are works devoted to the vessels shapes typology, basing on the method of ceramics processing, which had introduced into scientific circulation by IP Rasunova and VF Daming in 1973. These typologies had arisen from the mid-1980s and still are working. These include typology of AM Obolinsky, OS Rumyantseva, AM Vorontsov, VV Grishakov. Besides them there are typologies based on the features, defined as type-forming by the researchers themselves (for ex. the functional features of vessels, features of profiling and others) - typologies of BV Magomedov, O. Petruskas OI Matveeva, GA Massalitina. Thus researchers attention focused mainly on the vessels shapes. At the same time, about the pottery technology facts is bit. The first step in this direction has been made by AA Bobrinsky. He studied in detail the pottery of the Chernyakhov culture, in particular the selecting and procuring the raw materials, blending the pottery pastes, features of build, the study of pottery circles, the organization of the pottery industry. In addition, technical-and-technological analysis conducted by NP Saliugina of the Imenkov culture pottery covered all stages of pottery production and gave a full presentation about the traditions of this population. In recent years, some ceramic sets of Chernyakov culture begun to be exposed to petrographic and X-Ray studies.

We believe the analysis of pottery technologies is the topical question of study of sedentary cultures of the Eastern-Europe forest-steppe, and this stage of our research work is devoted to the characteristics of the raw materials and pottery pastes. Our observations were made on fresh fracture sherdas using stereoscopic microscope M5-1. Definition components of raw and paste composition was carried out by collation with a models collection, developed on the basis of Samara expedition to the experimental study of ancient pottery.

The research was identified the several traditions to varying degrees dominant in different territories. However, the general of most traditions are the selection skills potters of "low-fat" clays and adding a grogmade of splintered vessels in the composition. We suppose that the detected affinity of pottery traditions is reflecting the close connection within the studied population.

TH1-31 Abstract 23

Glass beads of Imenkov culture
(on the materials from the Tetushskoe II settlement, Middle Volga)

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Keywords: glass, beads, Imenkov culture, Middle Volga region, imports, the Middle East

Presentation Preference - Poster

Tetushskoe II settlement is situated on the northeastern outskirts of the modern town of Tetushi (Tetushi district, Republic of Tatarstan). Our investigations suggest that the glass beads which were found on the settlement are the imports from one region, the Middle East. The analogues to these beads within large geographical limits show their extremely long chronology. Nevertheless, we can say that on the sites of Upper Kama region, which is the closest territory to the Tetushskoe II settlement, such beads only appear from the 6th century A.D.

TH1-31 Abstract 24

'Burakovo horseman': burial, hoard or imaginary assemblage?
(concerning the status of the complex)

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Keywords: early medieval archaeology, hoard, Middle Volga region

Presentation Preference - Oral

Every archaeological culture contains a site that becomes 'an archaeological talk of the town' in a positive or negative way. Komintern 2 burial ground became such type of site for the Middle Volga region sites of the 1st millennium AD. The site was heavily damaged by abrasion and excavations (1994-2005) were irregular and limited. Reports on Komintern 2 excavations were partly published (Kazakov, 1998; 2005), the historiographical tradition, mainly controversial has managed to developed in such difficult circumstances. Situation becomes more complicated due to existence of another complex, ’Komintern hoard’ (also known as ‘Komintern burial mound’), ‘Burakovo burial ground’ or ‘Burakovo horseman’) that was similarly named and have close location to Komintern 2 burial ground. The ‘hoard’ has controversial historiography developed around it too. This work aims to find origins and define status of the ‘hoard’ and its relations to the burial ground.

According to the first publication (Izmaylov, 1990) the ‘hoard’ originated from the burial ground (nearby Burakovo) that was destroyed by water reservoir. Later publication (Muhametshinina, 1998) as well as documents of Bolgar Museum Reserve argues that the artefacts were found by the resident of Burakovo, P. Levagin, in 1983 in Beganchik island (located in the place of eroded burial ground), 1 km far from Komintern. The first localization was inaccurate, as there is 5 kilometre distance between Burakovo and bank of the reservoir. The second is also inaccurate (as the island located to the west from Komintern and no burial mounds were found there earlier), however it may be more trustworthy. Attribution of all the artefacts to one complex is a random interpretation of P. Levagin, who had no give details neither about the place nor about the composition of the hoard.

The composition of the ‘hoard’ is chronologically and stylistically heterogeneous. The majority of the artefacts are dated from the end of the 6-th - 7th centuries. A silver fibula dated the 5th century, a two-edged sword probably from Asazino culture burial ground of the 3-4th centuries are beyond of this chronological frameworks. The iron stirrup and probably two silver belt plates are of the 8th century. In spite of the chronological entity of the group of other artefacts, stylistically they can be divided at least into three groups: (1) golden belt-set and two pommels of swords with turquoise inserts, (2) silver stamping belt-set with lead filling, characteristic for 3rd horizon of Volga region heraldic style, (3) two cast silver strap ends of Artsybashchev type. Other finds can not be attributed to any of these groups. The presence of these artefacts in the one closed complex is considered to be extremely unlikely.

Apparently, ‘Komintern hoard’ is not the single complex and is an accidental selection of random finds collected from destroyed sites of the left bank of Akhtay stretched from ‘Devchis Goryodi’ to Beganchik Island. The island is considered to be the most likely place of finding of the main part of the hoard and is related to the several destroyed burials of Komintern 2 burial ground.

TH1-31 Abstract 25

Preparatory stage of pottery technology among the Russian forest-steppe cultures in IV-VII AD

Author - Nikitina, Anna, Samara State Technical University, Samara, Russian Federation (Presenting author)

Keywords: ancient pottery, East European Plain, Migration period

Presentation Preference - Poster

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The Iron and the Smartphone: 'expensive' technologies at the verge of the millennium

Author - Larraín-García, David, UCL Institute of Archaeology, London, United Kingdom (Presenting author)
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Keywords: farming iron implements, medieval peasantry, technology
Presentation Preference - Oral

It is widely accepted that the fall of the Roman Empire had a negative impact on the iron industry across Europe affecting its production, distribution and consumption (e.g. Tytoltipka 1990). The metal production centers became closely linked to political, military or religious powers (Hinton 2005) mainly focused on providing iron to elites since iron objects were expensive items (Jaritz 1995) not affordable for most of the populations. Archaeological evidences contribute to this supposed scarcity of metals within the peasantry since agricultural implements of early medieval chronologies are infrequent: typically rather eugious numbers of barely 1-2 items per site (e.g. Hamerow 2011).

In stark contrast with these arguments, recent archaeological excavations on rural settlements from Early to Late Medieval times (Quirós Castillo 2011) carried on the Basque Country area (north of Spain) point out that even during the earlier period the inhabitants of the villages enjoyed relatively large amounts of iron implements –counts by hundreds–, typically households or farming base tools. The metallographic analyses of thirteen iron implements reveals that these are very acceptable quality items made from low carbon steel by pitting, employing occasionally sophisticated techniques such as annealing and even the complex pattern-welding technique as far as only seen in the decoration of high status weaponry (Peirce 2002).

This paper aims to investigate the engineering background behind the iron production and manufacture of iron utensils during Early Middle Ages as well as the accessibility of those by the peasantry; the concept of 'expensive' applied to technology is reviewed to point that medieval iron might be high-priced but still an affordable commodity same as the electronic technology nowadays. The conclusion is that ‘expensive’ is a very relative term depending not only on production and consumption parameters but also that geographical location, role within the society or political context had a considerable influence to access the reviewed to point that modern iron and offers a tentative reconstruction of interplay between iron models of production and peasant communities during EMA in the Basque Country area.

References cited:

TH1-32 Abstract 01
Basque Iron metallurgy, habitat and social complexity during the Middle Ages (7th-14th A.D.)

Author - Dr. Jose Luis, Solan, University of the Basque Country (UPV/EHU), Vitoria-Gasteiz, Spain (Presenting author)
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Co-authors - Escalante-Ruiz, Sergio, University of the Basque Country (UPV/EHU), Vitoria-Gasteiz, Spain
Presentation Preference - Oral

The histography of the Basque Country has traditionally related the Early and High Medieval iron and steel production with the modern economy, and the Cantabrian coast. That is, with ironworks located generally on the top or flanks of mountainous terrain, equipped with one or more slag-tapping furnaces. These are the so-called hairozal, which in the Basque language are wind ironworks, as opposed to the zatorrak or hydraulic ironworks.

Justified by recent discoveries, it seems more likely that this impression is just a result of the nature of archaeological investigation itself which, traditionally, had been prioritizing very precise prospections and intervention in the mountainous zones of the Basque Country. Nothing, however, was known about the inland flatterlands except, paradoxically, that there was a major metallurgy activity judging from textual information. The so-called “Reja de San Millán”, dated 1025 A.D., gives the list of the almost 300 villages of Iria from which the monastery of San Millán de la Cogolla (La Rioja) demanded the payment of iron taxes, an obligation that was maintained one century later in the so-called “Falso votos de san Millán”, but which did not extend to the rest of the Basque territories.

This apparent contradiction between archaeological sources and written text has begun to be resolved with the systematic application of new-open area excavation strategies with veritably surprising results. As opposed to the historiencedigraphic view that basque medieval iron production located exclusively in mountainous terrains at a distance, the archaeological record shows us a more diversified reality with large metallic structures located in the flat areas of Iria, at the very heart of early medieval villages. The latter is, no doubt, the principal novelty: the location of iron factories in country villages. The development of this metallurgical activity can be divided into two extensive periods. The first, running between 600-950 A.C., is characterised by the existence of several settlements of a rural nature in which the same iron industry is developed,
This paper is an attempt to describe the development in the Baltic during the period 900 to 1350 AD in a holistic perspective pointing out iron production as a force for changes in different societies around the sea. During the Viking Age the societies around the Baltic underwent a remarkable development within agriculture, several towns were founded along the shores and in the river valleys and there was a change from pagan religions to different versions of Christianity. Supposedly there was an increase in a large scale trade with intensified contacts between the caliphate, Byzantium and the Carolingian empire, where the Baltic became a transit area. Iron might have been an important factor in the economy of the area, as the production increased significantly and was undertaken all around the Baltic. In the end of the period the island of Gotland became a center of smithing. Substantial iron production was initiated in the island of Saaremaa in Estonia and in the latest times on the Swedish east coast in the county of Småland. Here there was what has to be described as a mining area of lake and bog ore with over 1000 known bloomery sites with a minimum of 144 000 tons of produced iron. A production on such a scale during a period of 200 to 300 years evidently had a great impact on the whole Scandinavian and Baltic society, despite the fact a new more efficient technique, the blast furnace, was to be developed in the mining area of Bergslagen further north in Sweden around AD 1000. The bloomy processes of iron production survived the whole period and a regional specialization and social differention developed. As a result peasants on the plains founded their economy on grain production and peasants of the transitory regions between plain and woodland produced a surplus of animal products, while woodland peasants often sold handicraft articles, but iron opened up a new need for labor and produce, where the forests, lakes and bogs contributed with raw materials. Under these conditions iron production was introduced and raised within the peasant society linked to the emerging states, for example through towns like Kalmar, Gotland, Kuusassea and other towns around the Baltic. The role of the cities also grew in importance and urbanization became a vital part of these economic and social changes. Iron was traded from Kalmar during the 13th century under the name of Calmare iron. The iron production in Visby was recognized by the Pope in 1229 as a serious political problem. As the people of Gotland traded arms to the Baltic tribes thereby threatening the Christianization of the region. The letters from the Pope show that trade and production in the Baltic area were a European issue and a part of a European modernization.

TH1-32 Abstract 04
Bergslagen - a medieval innovation Centre
Author - Fil. Dr. Karlsson, Catarina, Bergslagens medeltidsmuseum, Skarpnäck, Sweden (Presenting author)
Keywords: Bergslagen, iron production
Presentation Preference - Oral
Changes in consumption, production and economic thinking require innovative environments and networks. Which settings, systems and actors enable innovation that can change the conditions for a whole society? In Sweden, the rapid emergence of Bergslagen was vital. The blast furnace was developed, perhaps as early as the 1000 AD, and around it extensive technical systems took shape, which then grew exponentially during the 11-1200's. Metals were recovered from rock ore in a new way and on an unprecedented scale. In Bergslagen, Sweden's economic base was built in a sparsely populated outpost. This setting was characterized by diversity and flexibility which characterizes resilience. This paper will discuss Bergslagen as a system network focusing on innovation, expansion and resilience.

TH1-32 Abstract 05
Iron in the everyday life in the medieval rural sites of Western Nyland (Fi. Uusimaa) in Finland
Author - M.A. Teräs, Elna, University of Helsinki, Helsinki, Finland (Presenting author)
Keywords: Iron production and circulation, Material culture, Medieval countryside
Presentation Preference - Oral
During the last decade several medieval rural sites has been under a research in the Western Nyland and from these excavations quite nice amount of objects telling about making, repairing and consuming iron objects has appeared. In this paper the am is consider the recent finds from a couple well researched villages as well as the castle of Raseborg, which was the administrative center of Western Nyland from the end of the 14th century to the middle of the 16th century. The question is, can the iron production, the trade of iron and making objects be reached by analyzing these objects? Also the life course and use of iron objects found from these sites are considered, as it can give us access to the production as well. The castle of Raseborg had of course a very special need for iron products. For example, the historical sources tell about making firearms and other weapons in the castle at least in the 16th century. Interesting question is, how the castle ensured the access to the raw material and how the production of iron objects was organized. Was the organization of iron production and distribution somehow changed in the most critical moments during the history of the castle? The aim is also to consider, how the distribution of iron and objects in rural villages was related to the castle located in the same province. Were there perhaps some correlations between the organization of the iron production and distribution of the castle and villages? Just by researching archaeological finds these questions are hard to answer, but by combining the research of historical sources to the research of the material culture, the results might be fruitful.

TH1-32 Abstract 06
Forges, Furnaces and Cannon Foundries - Deserted 17th century Iron Industries in Sweden
Author - PhD docent Haggén, Georg, University of Helsinki, Espoo, Finland (Presenting author)
Keywords: Forge, Furnace, Cannon foundry, Iron industry, Thirty Years’ war
Presentation Preference - Oral
The development of the Swedish iron industry during the 1620s to 1640s is closely related to the Thirty Years’ War (1618-1648) which ranged across the continent. Although this is a thoroughly researched episode in European history there are lacunas in the knowledge. For example, there has not been much of archaeological research of the Swedish war industry and especially the iron industry of the period.

The rise of the iron industries during the war was particularly significant in the Middle Swedish province of Södermanland. However, immediately after the Peace of Westphalen many of the industrial plants were closed. In some of them, such Öllösa bruk and the cannon foundries of Grawitts and Bräms-Ekeby, there are well preserved archaeological remains left.

In 2015 archaeological field work was started on these sites. The idea is to make research on four levels, to set these case studies in a wider context. The iron industries in the province of Södermanland make the regional context. The development of the iron production and the war industries in Sweden during the Thirty Years’ War offers a national context. A modern research should be placed on a wider European background, to the international context of the Thirty Years’ War.

The focus is on the entire life span of the iron produced for the army and the navy: from the furnace and forge to the arsenals and battle fields. On the other hand we shall not forget the rest of the iron production which was made for export – and its huge impact on the country’s economy. It was during the Thirty Years’ War when Swedish bar iron production was modernized and it made its successful entrance to the international iron markets.
Th1-33 Abstract 02
Phenomena of migration on Chalcidice

Author: Daní, Olivia, University of Basel, Basel, Switzerland (Presenting author)
Keywords: Chalcidice, colonisation, local identities
Presentation Preference: Oral

The Chalcidice, a peninsula in Northern Greece, formed since early times a transit area and can be interpreted as the endpoint of migrations. While it was called by the Greeks of the south “The peninsula in Thrace”, the toponym “Chalcidice”, which is used from the 2nd century AD onwards for the whole peninsula, was related before only to the area of the settlement of the Chalcidicians. The origin of the name is controversial from chalcos (copper), from the city Chalkis on Euboea or from the Greek tribe which settled in the area during the migrations of the 2nd millennium (Hdt. 7.118).

Beside the Chalcidicians settled numerous populations on the mainland and the three prongs Pallene, Sithonia and Ate. The return of the heroes of the Trojan War which reflect the movement of tribes is displayed in the mythical founding of the Chalcidian cities Ainea by Aeneas and Solone by Proteaileis. The rich resources from the area (timber, fertile land, mineral deposits) are central factors for the intensive colonisation in 8th/7th century BC. Settlers from Euboea, Andros, Corinth founded various apoikiai on the Chalcidice which shaped the region during the 6th/5th century BC. Cultural changes are connected through the history of the Chalcidice with the annexation to the Macedonian kingdom (346/4 BC) and when the Chalcidice became part of the Roman province of Macedonia (168 BC).

Based on this ethno-geographical and social dynamics of the microcosm of the Chalcidian peninsula should be investigated. The presentation provides on the basis of literary, epigraphical, numismatic and archaeological sources an overview of the methodological instruments which can be used to analyse the impact of new settlers on the local populations in this specific area. The aim is to analyse with a focus on the religious context the patterns of migration.

Th1-33 Abstract 03
A Regional Assessment of Migration in Roman Britain: The Cultural Narratives of Decapitation Burials

Author: Christie, Shaheen, University of Wisconsin-Milwaukee, Saint Charles, United States of America (Presenting author)
Keywords: Isotope Analysis, Migration, Roman
Presentation Preference: Oral

The Roman Iron Age in Britain (A.D. 43-410) is marked by progressive change in settlement and agricultural organization, population increase and diversity due to migration, evolution of social hierarchies and the rise of local burial traditions, particularly in formal cemetery contexts following the Conquest. Archaeological investigations of Romano-British burials have revealed differential burial treatments and attitudes toward the dead. Decapitation burials are the most common and diverse form of differential burial representation in this period. This presentation will focus on the diversity of the decapitation practice and will consider the use of sacrifice, including infanticide, penal execution, trophy taking, fear of the dead, or veneration practices toward individuals of presumed low, criminal, foreign, or slave statuses in Roman society. In addition, it has been suggested that the known decapitation practices stem from internal cultural development with little foreign influence from elsewhere in the Roman Empire. However, these interpretations have been based mainly on assumption rather than evidence from the archaeological contexts, and have yet to be systematically approached from the perspective of the archaeology of difference. This paper will use a multi-scalar holistic approach combining mortuary, bioarchaeological, and biochemical (strontium, oxygen, nitrogen, and carbon) analyses to test the idea that decapitated individuals in Romano-British society were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation. Drawing on multiple lines of evidence may illuminate previously overlooked social and biological patterns linking cultural behaviors and diverse ideologies of those individuals on the fringes of Roman Britain were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation. Drawing on multiple lines of evidence may illuminate previously overlooked social and biological patterns linking cultural behaviors and diverse ideologies of those individuals on the fringes of Roman Britain were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation. Drawing on multiple lines of evidence may illuminate previously overlooked social and biological patterns linking cultural behaviors and diverse ideologies of those individuals on the fringes of Roman Britain were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation. Drawing on multiple lines of evidence may illuminate previously overlooked social and biological patterns linking cultural behaviors and diverse ideologies of those individuals on the fringes of Roman Britain were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation. Drawing on multiple lines of evidence may illuminate previously overlooked social and biological patterns linking cultural behaviors and diverse ideologies of those individuals on the fringes of Roman Britain were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation. Drawing on multiple lines of evidence may illuminate previously overlooked social and biological patterns linking cultural behaviors and diverse ideologies of those individuals on the fringes of Roman Britain were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation. Drawing on multiple lines of evidence may illuminate previously overlooked social and biological patterns linking cultural behaviors and diverse ideologies of those individuals on the fringes of Roman Britain were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation. Drawing on multiple lines of evidence may illuminate previously overlooked social and biological patterns linking cultural behaviors and diverse ideologies of those individuals on the fringes of Roman Britain were associated with a single set of social norms by their communities, and address whether the presence of foreign individuals may have informed the practices of decapitation.

Th1-33 Abstract 04
Working bone and antler at Star Carr: Gaseous technology in space and time

Author: Dr. Elliott, Ben, University of York, York, United Kingdom (Presenting author)
Co-author(s): Little, A., United Kingdom

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Presentation Preference: Oral

Working bone and antler at Star Carr: Gaseous technology in space and time

This project aims to investigate the archaeological record of Grooved Ware sites in Britain to determine if these sites may have played a role as repositories for the production or consumption of refined gaseous materials. The distribution and consumption of working bone and antler at Star Carr in Yorkshire may be such an example, and help to inform our understanding of the wider landscape of Grooved Ware settlement in early Neolithic Britain.
Interpreting the Archaeological Record

Since its original excavation in the 1940s and 50s, the Early Mesolithic site of Star Carr has dominated discussions of osseous technologies within the British Mesolithic, and made an important contribution to wider debates over the significance of bone and antler materials within the economies of Early Holocene Europe. However, due to the resolution of on-site recording in the 1940s, and subsequent conservation and curation of the original finds, many questions concerning the precise character, context and duration of bone and antler working at the site have remained unanswered.

The recent, ERC-funded excavations at the site have yielded an extensive assemblage of bone and antler artefacts, the context of which has now been fully recorded and analysed for the first time. This paper will present the results of these new investigations at Star Carr, combining contextual and spatial data with osteological analysis and microwear studies to allow an unprecedented discussion of the ways in which antler barbed points, antler headshafts, elk antler matacores, bone bodkins and aurochs bone scraping tools were made, used and deposited at c.9000 cal BC in North Eastern Britain.

TH1-33 Abstract 05
Bone functional adaptation in the femur: a quantitative analysis in historical populations

Author - Dr. Simoni, Francesco, Montalcino, Italy (Presenting author)
Keywords: computed tomography, migration period, moments of inertia
Presentation Preference - Oral

Bone is responsive to mechanical stimulation. Working aspects and social conditions are able to bring about significant skeletal alterations, which can be revealed in postmortem. Quantitative evaluations of the makers of occupational stress (MOS), in particular in the lower limbs, have been provided through the analysis of the cross section geometry of the diaphysis. Some historical populations of Friuli Venezia Giulia (North-Eastern Italy and Slovenia) have been studied with quantitative MOS methods. The activity patterns were already known for every group, especially about the loads to the lower limbs. Femoral cylindroids were obtained by Multidetector CT scan of midshaft femur. Average values of the cross section geometrical properties (areas and second moments of area) have been calculated to evaluate bone functional adaptation in each cylindroid. Furthermore, the comparison between the two femur cylindroids has been assessed. This latter method has no evidence in current literature and its utility is object of study by our group. The analysis of the outcomes has shown that this methodology is able to give a good discrimination of the samples in respect of the different levels of mechanical use of the lower limbs. In particular, moments of inertia have been turned out highly sensitive. This working and cost-effective technique might represent a useful non-destructive and operator-independent method in bioarchaeology and could be useful to evaluate and compare the MOS of historical populations.

TH1-33 Abstract 06
The investigation of Early Slavic sites in North-Eastern Germany in the last 25 years. A review

Author - Dr. Schneeveis, Jero, Institute for the History of Material Culture RAS, Saint Petersburg, Russian Federation (Presenting author)
Keywords: Historigraphy, Slavic archaeology, Western Slavs
Presentation Preference - Oral

The development of Slavic archaeology in Germany is closely connected to political history. Thus, with the political turn in 1990 began a new period in the archaeological investigation of the Slavic past as well. The advancement of a new generation of researchers went hand in hand with re-evaluations of old paradigms and reorganisation of research. Dendrochronological data played a major role, especially in the discussions of two crucial issues: 1) the immigration of the Slavs between the rivers Elbe and Oder and 2) the dating and historical context of the numerous Slavic ring forts. Analyses of ceramics remained an important research topic. This period of intense investigations and academic debate came to an end at the turn of the millennium, when some of Europe's most exciting prehistoric research works were published. Since the first decade of the 2000's the extent of Slavic archaeology in Germany is decreasing, as measured by the number of published academic research in this field. Contemporary directions in archaeology are often focusing on more theoretical approaches and provide new perspectives on well-known research issues, while rescue excavations keep on being the main source for providing new data. Nevertheless, Slavic archaeology was the topic of academic research programmes in the last decade, too.

TH1-34 Abstract 01
From Temples to Towns: The Role of Sanctuaries in Urbanization Processes

Author - Dr. Fernández-Gótz, Manuel, University of Edinburgh, Edinburgh, United Kingdom (Presenting author)
Keywords: Identity, Religion, Urbanization
Presentation Preference - Oral

From the Mesopotamian ziggurats to the urban sanctuaries of the Greek polis and the public spaces within the Late Iron Age oppida of temperate Europe, religion appears to be an essential element in most urbanization processes, being at the root of the fusion of previously scattered communities. In some cases it has even been determined that the existence of a place for cult activities preceded the construction of a significant number of people or even the fortification of the area. Drawing upon different archaeological case studies and historical comparisons, this paper will explore the crucial role of sanctuaries as focal points for social aggregation and collective identity construction.

TH1-34 Abstract 02
Taxonomy, Archaeology, and Ethnology: Myths and Realities for Prehistoric and Modern Settlements

Author - Prof. Zubrow, Ezra, University at Buffalo and Toronto, Buffalo, United States of America (Presenting author)
Keywords: Demography, settlement, archaeology, ethnography, ethology, international, Taxonomy, classification, ontology
Presentation Preference - Oral

This study examines ethnographic and archaeological settlements on a worldwide basis, and presents the results of testing various models against the available archaeological and ethnographic data. Generalized settlement taxonomies from several...
THI-34 Abstract 03
How clustered were clustered settlements really?
A case study on the Gátahöyük West Mound

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Co-author(s) - Regasch, Jana, Flinders University of South Australia, Adelaide, Australia

Keywords: Architecture, Chalcolithic, Neolithic
Presentation Preference - Oral

This paper will demonstrate how modern, small-scale approaches towards architecture analysis question traditional views on the inner workings of a clustered settlement. Using our recent excavations on the Gátahöyük West Mound as a case study, we will scrutinize whether a settlement that visually appears clustered to the archaeologists actually functioned like a house cluster in the past. After 6500 BC, the settlement of Gátahöyük experienced fundamental changes in its socio-economic makeup, which are expressed in alterations of the settlement layout and organization. In the uppermost building levels of the Neolithic East Mound the settlement transformed from a tightly clustered and large agglomeration of houses into a series of individual houses or house clusters with open areas between them. At the same time, the tightly integrated social structure that characterized the site before 6500 BC loosened when households started to be economically more independent. During the following Early Chalcolithic period (ca. 6000-5500 BC), there seems to have been a return to dense clustering on the West Mound, suggesting another change in social structure. However, ongoing work on the formation processes of the built environment on the West Mound questions whether the buildings were actually all in use at the same time, which provides a new perspective on the use, function and meaning of settlement space of Neolithic and Chalcolithic settlement mounds.

THI-34 Abstract 04
Spatial and social patterns in LBK Neolithic settlement

Author - Michalak, Katarzyna, University of Gdańsk, Gdynia, Poland
Co-author(s) - Polczyński, Łukasz, University of Gdańsk, Gdańsk, Poland (Presenting author)

Keywords: built environment, community organisation, spatial organisation
Presentation Preference - Oral

This paper focuses on the results of a study aimed at examining the relationships between neighbouring LBK houses based on analysis of location of activity zones related to the houses. The social and spatial organisation of LBK settlements is still under discussion. Usually the houses are perceived as independent, self-sufficient units within a village. Based on the research on 59 longhouses recorded at two large, multi-phase LBK settlements in southern Poland we would like to present more complex image of the settlement organisation.

Considering chronological relations between the houses, we analysed the spatial and functional diversity of features located around the longhouses and artefacts found there. This analysis allowed us to identify (1) ‘dirty zones’ interpreted as possible places of household activities and intense deposition of waste, and (2) ‘kitchen zones’ interpreted as places associated with processing and/or storing of food. The ‘dirty zones’ are associated with accumulation of artefacts (pottery and flints) recorded usually in lateral pits and rubbish pits, and situated on one side of the house. The ‘kitchen zones’ are characterised by the presence of features associated with direct use of fire, sunken-floored huts and grain remains.

The location of the zones around particular houses was varied. However in most cases we recorded a connection between the location of the zones and a neighbouring house of the same or earlier phase. The spatial analysis indicates that the activity zones have been probably used by inhabitants of more than one longhouse. This shared space can be an indicator of close social relations (e.g. kinship) between them.

THI-34 Abstract 05
Activity Zones and Community Formation: The Role of Spatial Structure in Early Nucleated Villages

Author - Dr. Salisbury, Roderich B., University of Vienna, Vienna, Austria (Presenting author)
Keywords: Neolithic Europe, social organization, spatial analysis
Presentation Preference - Oral

Spatial relationships are among the most important sources of archaeological evidence, and one of the most important aspects of social organization. Spatial structure, including the locations of craft areas and activity zones, is an essential aspect for understanding craft specialization, cross-craft interactions, power structures, inclusion/exclusion, and a host of other social relationships. Along with multi-scale and diachronic approaches, comparative spatial analyses are an essential tool in understanding the influence of nutrition on the processes of everyday life. Drawing on ethnographic and archaeological comparisons from the Near East, Europe and eastern North America, this contribution examines different use of space in different types of sites during the Late Neolithic on the Great Hungarian Plain. I argue that different types of sites, even if the differences are sometimes very subtle, show different spatial patterning of houses and activity zones. Furthermore, by increasing the social significance of identity while exposing people to a greater number of communities, these differences were instrumental in facilitating the socio-political changes that accompanied settlement and population aggregation.

THI-34 Abstract 06
Assemblages of material-social interaction and the creation of space at Polgár-Csoszhalom

Author - Raczky, Pál, Eötvös Loránd University, Budapest, Hungary (Presenting author)
Co-author(s) - Andéra, A., Eötvös Loránd University, Budapest, Hungary

Keywords: built environment, Carpathian Basin, Neolithic
Presentation Preference - Oral

The case study focuses on materialities and interactions as related to the built environment at the Late Neolithic settlement complex of Polgár-Csoszhalom in the Upper Tisza region (Hungary). House constructions and associated attributes provide particularly interesting contributions to the study of the site. Previous archaeological investigations have been concerned with the macrostructures (walls and horizontal settlement) of the Csoszhalom settlement complex. These studies were able to reconstruct two different reference systems of spacetime that diverged regarding their basic characteristic features. In our interpretation, the tell and the enclosure system represented a higher level of integrative architectural principle: this unit was not simply a residential area, but an arena for events with a unique choreography, which was very distinct from the surrounding horizontal settlement, the physical setting of everyday activities. Both house construction and house burning on the tell were special actions, which were fundamental parts of the formerly reconstructed, complex feasting practices implemented in the enclosed section during its ca. 350 years long life-span, in the first half of the 5th millennium BC.

Regarding settlement organization, fundamentally new data were provided by a large-scale magnetometer prospection in 2014. The preliminary analysis of the measurements identified another enclosure system, composed of two ditches, as well as burnt house structures west of the tell, in the context of the horizontal settlement. Altogether, the results infer that interactions between human groups and various features in the Csoszhalom settlement complex may have been much more sophisticated than previously thought.

The presentation will provide a detailed contextual assessment of the currently available 109 AMS dates from the site, in order to move beyond the duality of the enclosed tell and the horizontal settlement. In addition, we will examine the internal dynamics of interactions between houses, pits, wells and burials that represent the various physical loci of human activities and events. Finally, the spatial and functional associations of these loci and their social implications will be discussed. The project was funded by the Hungarian Scientiﬁc Research Fund (OTKA Grant 101024).

THI-34 Abstract 07
What's outside an Eneolithic tell settlement? Case studies from the Balkans

Author - Craciunescu, Ionela, National History Museum of Romania, Bucharest, Romania (Presenting author)
Co-author(s) - Lazar, Catalin, National History Museum of Romania, Bucharest, Romania
Keywords: Eneolithic, spatial analysis, tell settlement
Presentation Preference - Oral

The aim of this paper is to investigate the surroundings of the Eneolithic tell settlements in the Balkans (Romania and Bulgaria), from the 5th millennium BC. The traditional biases are that the prehistoric habitation was limited to the tell area and that the
deceased were buried in the nearby cemeteries (most of them discovered by chance) or, in few cases, inside the settlement. This situation is a consequence of the actual state of research, with systematic excavations performed mostly on the mounds. Recently new multi-disciplinary research made in Bulgaria (e.g. Popovtziants and Romania (e.g. Petraliki, Sutanu) led to discoveries that revealed archaeological structures outside the tells that attest intensive activities and habitation. This situation brings a whole new perspective on the relationship between the nucleated tell settlements and the various activity areas from their vicinity, including the funerary areas. Further research will focus on analysing these variables in searching for rules and exceptions, with the help of GIS analysis techniques. The main advantage of GIS approach is the ability to model and visualize spatial trends that would be hardly noticed and time consuming if only traditional methods were used.

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TH1-34 Abstract 08

Experience, organisation and identity within the nucleated broch villages of Northern Scotland

Author: Gal, Emily, University of St Andrews, St Andrews, United Kingdom (Presenting author)
Keywords: Brochs, Iron Age, Scotland
Presentation Preference - Oral

This paper will explore the Iron Age nucleated ‘broch-villages’ of northern Scotland and their significance within the wider settled landscape. Brochs are a well-recognised drystone domestic structure in later prehistoric northern Scotland, with distributions extending across mainland Scotland and the Northern and Western Isles. Interestingly, the brochs of Orkney, Caithness and Shetland are often directly associated with nucleated ‘villages’ consisting of a number of smaller structures, within an encircling boundary. These structures took a variety of forms, in a radial or non-radial arrangement around the broch, with entrances often facing inwards. Archaeological evidence suggests that they were primarily domestic in nature, although some sites have revealed evidence for the housing of livestock, metalworking, and other craft activities. Most were equipped with standardised furnishings including hearths and stone-lined tanks.

The spatial organisation and purpose of these villages with the monumental broch as their focal point is investigated with reference to archaeological evidence and theoretical approaches, resulting in a deeper understanding of social and organisation in the settlement environment. Beginning with a comparison of contemporary regional settlement types, prescribed movement around the nucleated settlements will then be explored (e.g. Foster 1989b), as well as social relations and interaction in these architecturally-crowded settlements. Through the consideration of a number of relevant case studies it is suggested that over time a social system arose. A model for the restriction, control, dependence and isolation may have developed. Additionally, it should be argued that such settlement dynamics represent later prehistoric regional power structures which were to develop into the historic period. A number of relevant case studies spanning northern and Atlantic Scotland will be discussed, namely from Caithness, Orkney and Shetland.

TH1-34 Abstract 09

Kernave Town in 13-14th Centuries: Social and Cultural Pattern of Community

Author: Dr. Vengalis, Rokas, Lithuanian History Institute, Vilnius, Lithuania (Presenting author)
Co-author(s): Dr. Valius, Gintautas, Administration of the State Cultural Reserve of Kernave, Kernave, Lithuania
Keywords: community organization, The Middle Ages, towns
Presentation Preference - Oral

The Eastern Baltic region in a European context is distinguished by its peculiar historical development. For a long time, there was no state, no Christianity and no towns here. Small, isolated, poorly stratified agricultural communities lived here till the 13th century. German Knights founded the first medieval towns in the margins of this region in the 13th century. Meanwhile, the Lithuanian state emerged on the basis of the pagan tribes (Lithuania was christianised only in 1387) and the first political administrative centers, which eventually developed into towns, were created. One of the earliest towns in Lithuania was Kernave, the residence of the grand dukes of the 13th century, which is considered to be one of the most important economic and political centers. Therefore, in the context of European medieval history, Kernave is unique, because the town was shaped by the pagan community. Archaeological and interdisciplinary research allows the reconstruction of the socio-economic model of medieval Kernave. The most important archaeological objects of that period in Kernave are defensive systems of five hill-forts, the upper and lower towns, and inhumation and cremation burial sites. These structural parts of medieval Kernave are associated with the activities of different social groups. The central hill-fort was the residence of a duke. It was surrounded by three hill-fort complexes, which functioned as defensive. Two of them were meant purely for defense. The third hill-fort had dual function, because it was populated by urban artisans and merchants, but it also held a defensive function. The function of the fifth hill-fort, which is situated furthest to the east, is not clear yet. The valley, which is situated between the hill-forts and the river, as well as the upper river terrace, was built up by the homesteads of craftsmen. The activity of certain social groups is clearly distinguished by the numerous artefacts and ecofacts. For example, the residence of a duke was identified by the abundance of especially luxurious imported goods.

Meanwhile, the number of finds in defensive hill-forts is relatively small but they are distinguished by powerful fortifications. It should be noted that there were no artefacts connected with more intense agricultural activity found in any of the investigated locations, indicating the non-agrarian character of the community. Furthermore, these investigations illustrate the nature of social stratification and geography of society – there are obvious cultural and confessional differences of Kernave residents in different town areas. The artifacts discovered in the lower town are clearly of local Baltic origin, whereas the majority of artifacts discovered in the upper terraces are continuations of the Slavic jewelry traditions. It may be that two different homelands lies in these cultural sites (inhumation and cremation) could be related with the communities of different confessions. Therefore, the research shows that in Kernave there was a clearly socially stratified urban community, which is characterized by cultural and religious syncretism, unique material culture and combination of pagan and Christian worlds.

TH1-34 Abstract 10

Uncovering Medieval Urban Planning: the case of Oslo and Magnus Lagabøt

Author: Oldham, Mark, Norwegian Institute for Cultural Heritage Research, Oslo, Norway (Presenting author)
Keywords: Medieval, Oslo, Planning
Presentation Preference - Oral

Oslo is currently undergoing an urban transformation, with new city districts and transport infrastructure being constructed. One such project, the new Follo Line railway, has provided archaeologists at the Norwegian Institute for Cultural Heritage Research the opportunity to excavate a large part of the medieval city. This paper will take inspiration from the current new wave of city planning to examine Norway’s first planning law, Magnus Lagabøt bylaw; in the light of the ongoing archaeological excavations. Issued in 1276, Magnus Lagabøt bylaw regulated both the use of space and behavioural practices, aiming to exercise control over both cities and population. Here, aim to investigate the extent to which the various articles in this piece of legislation can be identified in the architectural record. Can ‘good citizens’ be recognised, or is there evidence for a gap between de jure and de facto practices? This paper will hence also critically examine the relationship between the written record and the archaeological record, as well as consider how top-down planning instructions are negotiated, amended and, perhaps, subverted locally.

TH1-34 Abstract 11

Emergent Complexity and Neolithic Settlement Nucleation on the Great Hungarian Plain

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Keywords: Great Hungarian Plain, Neolithic, nucleation
Presentation Preference - Oral

The development of new social, economic, and political configurations frequently result in fundamental changes in settlement networks and settlement organization. In stark contrast to the previous period, the Late Neolithic archaeological record of the eastern Carpathian Basin indicates a settlement distribution of spatially discrete polities with multi-tiered settlement hierarchies surrounding therefore unprecedented, sizeable centers in the region. In this paper, we focus on tells and large Late Neolithic settlements on the Great Hungarian Plain and in the adjacent regions in order to demonstrate how the spatial analysis of built landscapes at various scales can aid our understanding of prehistoric socio-political organization.

The remarkable increase in social and economic complexity during the later Neolithic brought about novel social mechanisms and institutions to assure community integrity in these large demographic, economic, and political centers. We argue that considerable differences in their layout reflect a high degree of variability and resilience within similar egalitarian societies. The paper also addresses whether nucleation processes generated by exogenous causal agents resulted in a significant increase in social and economic complexity, or whether increasing social and economic complexity led to population nucleation.
THI-34 Abstract 12
Nucleated settlements in the Eneolithic of the south-eastern Poland?

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Keywords: Eneolithic, nucleated settlements, south-eastern Poland

Presentation Preference: Oral

At the beginning of the fourth millennia BC in south-eastern Poland (historical province of Lesser Poland – Polonia Minor) appears a new archaeological unit called Funnel Beaker culture (TRB), in the place where earlier units of the so-called Danubian Neolith have originated. From ca. 3600 BC, the growth of the area occupied by some settlements of this culture can be seen; this process seems to intensify with time. It is possible that such big settlements gained the status of micro-regional centers, around which the whole settlement network was organized. There are opinions that a two- or even three-tier hierarchical system of the TRB settlement was formed in that time. At the end of the fourth and in the first half of the third millennium BC, the biggest sites of the TRB reached a size of approx. 20 hectares. Because of this fact and due to the disappearance of most of the smaller sites, one can assume that a greater part of the local populations concentrated in these big settlements. Interestingly enough, such large sites are often characterized by archaeological materials of a mixed character. The so-called Beaker-Baden Assemblages are a typical example of such correlation; i.a. they are known from phases IV and V of the site at Brzozowice, the Pińczów district (ca. 2100–2000 BC). A phenomenon of this kind has also been observed in Lesser Poland beyond the TRB. For example, in the large settlement in Zlota, the Sanomierz district (ca. 2900–2600 BC), the widespread coexistence of elements of the Baden culture, the Glubior Amphora culture and the Corded Ware culture were recorded. It is significant that this site is actually the only settlement of the local archaeological unit called Zlota culture. Other sites of this culture are cemeteries and numerous single graves. Therefore, it can be assumed that this result is concentrated from the population of one central point of the settlement area, this time of the mezio-region scale. The presentation has the objective of clarifying what kind of economic processes and social conditions conditioned the emergence of big, Eneolithic settlements in south-eastern Poland. Some interpretative problems associated with such settlements will also be examined, e.g. questions of "invisibility" of houses within them and their relationship to the monumental, sepulchral structures of the TRB. For this purpose, a series of computer geographic analysis were performed including: 1) the internal arrangement of anthropogenic structures within big settlements, 2) the internal dynamics of their development, 3) the location of such sites in terms of environmental conditions, 4) their potential activity zones, 5) the degree of human interference in the environment around them, and 6) the relationship between them and other localities. All these computer geographic analyses have been recently performed (i.a. at the TRB site Mozgawa, Pińczów district). They are based on the results of surface surveys, geomagnetic prospectings, excavations as well as palaeoenvironmental studies.

THI-34 Abstract 13
Organizational variability of Bronze Age settlements in Hungary: a long-term approach

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Keywords: Bronze Age, fortified settlements, Hungary

Presentation Preference: Oral

Large, nucleated settlements - tells, hilltop sites, fortified settlements – are ubiquitous phenomena in the Bronze Age of Europe and specifically the Carpathian Basin. Recent research on microregional settlement patterns in Hungary has revealed a great variety of such settlements in varied regional contexts with apparently varied internal structures and connections to the wider social and natural landscape. Building on an earlier paper where we reviewed the history of Early Bronze Age and Middle Bronze Age fortified settlements in Hungary, the aim of our presentation is to provide an analysis of the changes of such nucleated settlements throughout almost 2000 years of the Bronze Age (2600/2500–800–700 BC) within their internal structure, its remains, and internal and international organizational principles. Data on changes in settlement structure and changes in the locations of major centres and populated areas will provide a wealth of information on the socio-economic history of Bronze Age communities in Hungary.

Our goal is to examine the settlement networks in this longer period in the central, southwestern and southeastern part of the Carpathian Basin Hungary, with special attention to (1) the function and position of the fortified sites in the landscape, (2) their role within the settlement or economic units of the periods and (3) their role in the cognitive and symbolic systems of the period, to decide whether their foundation was accidental or the result of a premeditated/intentional decision. The broader review of the whole settlement network might shed light on the temporal and spatial changes of the main causes in the background, and in some cases can give a valuable interpretation for the landscapes of complexity.

THI-34 Abstract 14
Spatial patterns of Nuragic sanctuaries inside settlements and in the countryside of Sardinia

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Keywords: GIS analysis, landscape archaeology, Nuragic culture

Presentation Preference: Oral

Sardinian Bronze Age and Early Iron Age Nuragic monuments are renowned as impressive examples of a community effort. Nevertheless, the motivations and social organisation of the communities behind the joint efforts in creating those enormous and sophisticated built settlements are still debated and barely understood. The Nuragic civilisation developed in the Middle Bronze Age and Early Iron Age, from about 1900 – 730 BC (MBIA to EIA). Nuragic settlements were spread over the entire island (more than 6000 are still visible in the landscape), and the Nuraghes can be subdivided into mono-tower and multi-tower. In later times (Final Bronze Age, FBA) the use of Nuraghes declined; while complex villages arose – most times nucleated villages distributed around Nuraghes, but also in new places in the landscapes.

In contrast, sacred monuments or areas are less frequently identified. While for the earliest phase of the Nuragic civilisation no more sacred places can be identified, they gradually become visible in the weave of giant tombs and in megaron temples. From the beginning of the LBA a preference for fonts and wells can be observed, saturating in water sanctuaries of finest mansion in the FBA and EIA. The sanctuaries are of different characteristics, some of them being quite remote while others were integrated with Nuraghes and Nuragic complexes. A few of them are rather large, consisting of different buildings, partly surrounded by huts, built for large groups of visitors (sometimes called 'federal sanctuaries', e.g. Santa Cristina- Paulatino or Santa Vittoria – Serri); others are more domestic, only suitable for smaller congregations. In the LBA the collective workforce seems to be shifted from the Nuraghes to the sanctuaries. Additionally, a change in the skills and preferences of mansion can be observed. Though the actual building of the Nuraghes ceases, they survive partly in conversion and also as sculptured models of stone that was treasured in many of the sacred and/or meeting places. The refined religious practices observed somehow display changes in collective understanding of their surroundings manifest in the exploration of fonts and wells. The processes are not fully understood, and were probably influenced by intensified contacts with different cultures of the Eastern and Western Mediterranean.

The study researches the interrelation of the sanctuaries with different natural and cultural aspects within a GIS. The reference to water, other resources and infrastructural aspects are investigated, as well as the clusters of settlements they relate to, but also to other cultural patterns such as votive deposits (differentiating local and imported materials). In case studies it also takes into account the patterns of sanctuaries located close to or within settlements, and the ways in which they were incorporated into new settlement foundations or added to existing settlements.

Attempts to interpret the Nuragic civilisation and their features are numerous and manifold. Scholars claim models from elite structures to egalitarian systems. The study finally discusses the results in regard to different theories currently debated.
TH1-34 Abstract 16

Settlement mounds: A long-term analysis of the settlement organization in the Iron Age

Author: Phil Haue, Niels, Historical Museum of Northern Jutland, Aalborg, Denmark (Presenting author)
Keywords: Iron Age, settlement mounds, socio-economically organization
Presentation Preference: Oral

The settlement mounds in Denmark date to the Pre-Roman Iron Age and the Roman Period, and the excavation of these complex mounds offer detailed analysis of the long-term social organization of rural villages in South Scandinavia. The paper will present a case study from northern Jutland, Denmark to discuss how spatial divisions within nucleated settlement mounds could regulate the socio-economic patterns and dynamics of prehistoric villages. In particular, the paper focuses on the ways that the best "addresses" of the village could maintain their dominance for several centuries, and how architecture was used to express and manipulate identity within the village.

TH1-34 Abstract 17

Structured villages from the Early Roman Iron Age in central-southern Jutland, Denmark

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Keywords: Early Roman Iron Age, farmssteads, nucleated settlements
Presentation Preference: Oral

During the Danoic Late Pre-Roman Iron Age in parts of western and southern Jutland there was a shift from a dispersed to a more nucleated settlement structure. This is best illustrated by a handful of villages that were enclosed by common fences. At the start of the Early Roman Iron Age there is a dramatic increase in the number of nucleated settlements, some of which seem to emerge rather suddenly, often where there has been little or no previous occupation.

Rescue excavations have brought to light a number of structured villages from the beginning for the Roman Iron Age that were composed of several individual enclosed contemporaneous farmssteads laid out in a linear plan. The layout of individual farmssteads and the buildings within them were themselves architecturally uniform giving these villages, as a whole, a relative homogenous character. When comparing different settlements to each other, there are variations in settlement and farmstead layout, there are also variations in similarities but there were differences. This may indicate that there were underlying social-cultural norms or rules in how these village communities should structure their settlements and farmssteads which were maintained by these communities over several generations. In this paper, I will present several Early Roman Iron Age settlements excavated by Sønder storup Museum in a limited geographical area of southern-central Jutland.

TH1-34 Abstract 18

What does settlement layout tell about the community?

Author: Phil Yalman, Emine Nucan, Cultural Awareness Foundation Istanbul, CIE Center for International Heritage Ac, Istanbul, Turkey (Presenting author)
Keywords: ethnoarchaeology, interpretation, settlement
Presentation Preference: Oral

The layout of a settlement reflects long-term processes and mutual interactions that occur among many variables. Sometimes the factors that shape a settlement are the result of various deliberate decisions, but indirect effects also play a role in these processes. In an archaeological site, we usually excavate and observe only parts of settlements, and thus we find that many of the components are missing. Therefore, especially in prehistoric sites where there is no predictable site plan, it is difficult to interpret the community by studying the site. This paper will discuss the relationship between the structure of a community and the settlement layout and the factors that make a settlement nucleated, dispersed or agglomerated, with an etnoarchaeological study in Central Anatolia.

TH1-34 Abstract 19

The creation of powerful places in Etruria

Author: Dr. Stoddart, Simon, University of Cambridge, Cambridge, United Kingdom (Presenting author)
Keywords: Etruria, Genealogy, Heirarchy
Presentation Preference: Oral

The paper will examine the processes underlying the construction of powerful places in Etruria. On the one hand, the landscape of much of Etruria was dominated by what have been defined as primate centres in studies of political geography. On the other hand, burial evidence indicates the retention of counterweighing political genealogies that apparently contrasted with the apparent centralisation of power in the large centres. The paper will examine the resolution of this tension by matching emerging evidence from the nucleation of settlement (layout and organisation) with evidence for succession amongst political elites and their individual participants (the sequence and content of graves). The variation of this pattern at an interregional level will be added to the complex, often hierarchical, pattern of Etruria.

TH1-34 Abstract 20

Communication network structure in Latium vetus and Etruria: Two faces of the same coin?

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Keywords: central Italy, communication networks, urbanism
Presentation Preference: Oral

Communication infrastructures are emerging complex systems; they are not completely random, neither are they entirely planned according to a predefined project especially when there is no unified political framework. Transportation networks can be regarded as an epiphomenon of social interactions and interactions between societies and environments. At the same time, they influence the development of past societies (they enhance trade dynamics affecting the prosperity of a civilization) and their complexification (e.g. emergence of urbanism). There is a feedback loop. By analyzing and comparing fluvial and terrestrial communication networks in Etruria and Latium vetus between the Final Bronze Age and the Archaic Era with a newly developed Network approach this paper shows the similarities and differences between the two regions and contributes to explain why in the IVth century B.C. the nucleated settlement system prevailed over the rural. Moreover, this analysis suggests a relationship between the hierarchical dynamics of city-states organization (and its corresponding influence on infrastructural decision-making) and the structure of terrestrial routes networks.

TH1-34 Abstract 21

The Analysis of Changes in Post-Chalcolithic Settlement at Çatalhöyük

Author: MA Hordecki, Jędrzej, Adam Mickiewicz University, Kościan, Poland (Presenting author)
Keywords: Çatalhöyük, Hellenistic, settlement
Presentation Preference: Oral

Çatalhöyük is one of the most well-known archaeological sites. This fame is largely the result of Neolithic strata excavated there. However, this place was occupied in other periods as well. Evidence for this are registered both as on-site finds and, more importantly, remains of buildings from post-Chalcolithic periods. Because of its particular position, both at the regional scale of the Konya Plain and within Anatolia, Çatalhöyük played a specific role. Excavations at the site revealed strata and remains of settlement from Bronze Age, Phrygian, Hellenistic and Muslim Periods. Evidence for the first and the last periods were relatively scarce. However, finds and strata from the Phrygian and Hellenistic Periods indicate interrupted settlement from the 5th to 2nd century. Because of this, Çatalhöyük is a very good example of settlement characterized by diachronically viable social and economic complexity and cultural heterogeneity. The theme of my paper is to present the results of an analysis of late archaeological strata registered in the TP Area. Phases of settlement presented in the first part will become a base for further interpretations. From this,
it will be possible to show organizational variability of space, which will be a starting point for interpretations focused on changes in perception of this place. In the result in my paper, I will indicate the most important economic and social changes that took place in Cätihiliuk. That will be the answer not only for the question about the role of changes on site or in the region but also at the wider scale of Anatolia.

TH1-34 Abstract 22
Comparative Study of Settlement Systems in the Bronze Age and the Medieval Age
Author - Dr. Pusztilánszky, Klára, University of Miskolc, Miskolc, Hungary (Presenting author)
Co-author(s) - Pusztilai, Tamás, Herman Ottó Museum, Miskolc, Hungary
Keywords: Bronze Age, Middle Age, comparative study, settlement structure and using of space
Presentation Preference - Oral

Comparative studies on built environments between prehistoric and historic times at different geographical scales have yielded important results in various parts of the world. In particular, analyses of complementary datasets contributed to a better knowledge of similarities and differences in socio-economic developments at the local scale. However, less effort has been devoted to the matter concerning how abundant historic datasets can facilitate in understanding prehistoric settlement dynamics.

The aim of our paper is to examine settlement nucleation processes at the regional scale during two periods in Northeast Hungary. Two geographically distinctive, neighbouring regions, the Borsod Plain and the foothills of the Bükk mountains, will be included in this study, with particular focus given to the settlement patterns for the specific periods of the Bronze Age (between 2200 and 1600 BC) and the Middle Ages (14-15th centuries AD). We will explore the topography, settlement networks, space and land use, as well as house construction methods in a comparative regional and temporal framework. The economy of these two periods is based on agriculture and the exploitation of the immediate environment. The historical and cartographical sources, landmark inspections, and the well-known road-networks make possible to determine central sites contra villages in the 14-15th century AD in the micro-region. Based on the analysis of building methods, communal spaces, spatial organisation of the homes and the villages, and economic activities in these two periods, we propose a model that will determine critical factors about the Bronze Age settlement pattern (roads, central places, distribute places and activities between settlement).

TH1-34 Abstract 23
An exemplification of the socio-political make-up of the Late Bronze Age polities from Hungary
Author - Czukor, Peter, Móra Ferenc Múzeum, Szeged, Hungary (Presenting author)
Keywords: Bronze Age Hungary, Fortified settlement, Landscape, hierarchy
Presentation Preference - Poster

In the area of the Békés-Csanád loess table and the Banátin, SE Hungary and W Romania, a series of large fortifications enclosed by ramparts and ditches emerged in the period of 1300–1100 BC (Rei. Bo–HaA1). These huge structures, often hundreds of hectares large, got into the focus of Hungarian and Romanian research only in the past decade (have got into the focus of Hungarian and Romanian research only from the past decade). The fortifications, surrounded by a series of smaller rural settlements, forming a three-tiered settlement hierarchy, indicating a fairly complex society. The function of these settlements is debated to some degree, as they have not yet yielded substantial domestic remains, and their interpretation as refugia or ritual centres is also possible. This new type of settlement indicates significant although, up till now hardly known social and economic transformations in the last centuries of the 2nd millennia BC, in the Late Bronze Age. In my poster I will summarise the results of the research focusing on one of these fortifications, Mától–Rókás–Csávár and its hinterland. This small, 42 hectare large fortified site is investigated within the framework of a wider, micro-regional settlement study and will be interpreted in terms of the socio-political make-up of the Late Bronze Age polities.

TH1-34 Abstract 24
More than meets the eye: burial monuments and "landscapes of power" in late Iron Age Britain
Author - Minkevičius, Karolis, Vilnius University, Vilnius, Lithuania (Presenting author)
Keywords: GIS, Iron Age, Landscape Archaeology
Presentation Preference - Poster

As human beings, the desire and necessity to “change” landscape has been with us from the beginning of our existence. From the basic acts such as hunting or setting a campfire, to a more complex ones like constructing a transcontinental canal, our actions have been constantly changing the landscapes we inhabit. In prehistoric Europe these changes usually were an unintentional by-product of other activities. However, it is becoming increasingly evident that this was not always the case. Landscapes play an active part in societies, rather than being a passive reflection of some of their actions. They influence and are influenced by social interaction and social structure. Throughout the history numerous societies have used this phenomenon to their advantage. Here it is being suggested that such landscape control strategies can also be observed in the later Iron Age in eastern Britain. During this period the re-emerging cremation burial monuments of social elites were used in the creation of “Landscares of Power”. Some of them were used to visually dominate the social and political landscapes of the late Iron Age oppida. This hypothesis has been explored using GIS-based visibility analysis. By presenting case studies of Folly Lane, Lexden and Stanway it is argued that the role these burial monuments was not only to pay tribute to the deceased, but also to assist in establishing, developing and maintaining social and political power at the oppida.
BUILD WITH MUD IN THE NEOLITHIC: TECHNICAL CONSTRAINTS AND CULTURAL CHOICES

At the beginning of the Neolithic in the Middle East, the hand modeled mud was a structural material involved in the houses building. In various parts of Europe this material is gradually used, in the Balkans but also in the Neolithic of the Western Europe, in Italy, France or Spain for example. Earthen materials are used for multiple functions: as cob or mudbrick to realize upperstanding load bearing masonry, as daub to cover wooden walls, as plaster for walls or constructed floors and to shape containers, furniture or grain silos as well. This session aims to present the developments of the archaeological research on this subject, focusing on rural settlements and villages, in particular during the Neolithic. Contributions about Neolithic/Neolithic transition and Bronze age are welcomed as well. We propose to raise the question of the function of these various earthen constructions and to raise the question of determinism governing its use in competition or in complementarity with stone and wood, through models involving technical constraints and cultural choices. Papers can be also focused on the relationship between raw materials (selection and exploitation), technical choices and dwelling function. Spatial analysis, ethnoarchaeological, theoretical and experimental studies are encouraged.

TH1-35 Abstract 01
Some remarks about the role of environment and society in building technology

Author - Peinetti, Alessandro, UMR 5140, Paris, France (Presenting author)
Keywords: Building technology, Earthen construction, Ethnoarchaeology
Presentation Preference - Oral

Most often, the archaeologist underline the role played by environmental constraints in the elaboration of architectural models, in particular for the employed raw materials. This paper wants to explore the complex relationship between environment, cultural choices, building traditions, socio-economical context and technical constraints, presenting ethnoarchaeological and archaeological examples of earthen constructions in different European contexts. First of all, the observation of modern wattle and daub in northern France allows some remarks about the relation between employed raw materials and techniques. The results of the Neolithic wattle and daub analysis from different sites in Piemont (Northwest of Italy) stress the role played by tradition in building practices. Some case-studies from the Italian Bronze age, focused on earthen walls and floors building techniques, could be used to explore the role played by environmental constraints guided especially by socioeconomic needs.

Prehistoric contexts, as in vernacular architecture, the employed building materials are often local and show a good adaptation to the ecological environment. That’s a sort of common sense, but the identification of raw materials is just a first analytical level for the archaeologist. We need to make an effort and explore in deep the relationship between raw materials, technical choices and social context. In fact, each peculiar technical solution is often a solution among various other possibilities. The aim is to turn the archaeological reasoning and stress the technical variability in our approaches, to show the limits of the environmental studies as a basis for the role played by cultural choices in the world of ancient communities.

TH1-35 Abstract 02
The Aftermath of Mud Houses: Degradation and archaeological site formation

Author - Dr. Friese, David, University of Cambridge, Cambridge, United Kingdom (Presenting author)
Keywords: archaeological site formation, ethnoarchaeology, mud structures degradation
Presentation Preference - Oral

A major interest in archaeological research of domestic sites since the Neolithic is associated understanding and reconstructing human activity which took place within archaeological mud structures. Yet, rarely archaeologists encounter mud structures preserved to similar conditions as they were during their initial habitation phase in the past. It is therefore crucial to understand the post-depositional processes involved in mud structure degradation and how they form the contemporary archaeological setting. This paper presents an ethnoarchaeological study, conducted in recently abandoned mud structures in two distinctive environmental regions: And South Israel and temperate Northern Greece. The taphonomy of earth floors, mud brick walls, thatched roofs and microscopic activity remains was studied. Field observations and excavations were carried out with various ethnoarchaeological mud structures: the paper supplies guidelines to the identity of dark earth, occupation deposits, thatched roofs and degraded mud brick material. The results of this study presents the importance of combining macroscopic and microscopic analytical methods to distinguish between various infill sediments in order to enable better interpretation of archaeological mud structures.
archaeological features and layers relating to deterioration processes of built features. Burned daub fragments were entirely collected during the excavation as well. These materials are first analyzed from a macroscopic point of view. Technological analysis can be linked to the functional aspect of each structure and activity areas, to highlight both technical choices and socio-economic behaviors.

TH1-35 Abstract 05
Hearth structures and plasters from the Bronze Age settlement of Oratino: the dark side of the mud
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The Bronze Age site of Oratino – La Rocca is located on a small terrace beside the southern slope of a rocky hill that dominates the eastern side of the high Bilerno river valley, along an important route that penetrates the inland region of central-southern Italy from the Adriatic coast. The research conducted so far on the site allows us to recognize different moments of occupation mainly from 15th and 12th century B.C. During the final phase of occupation a series of six layers, characterized by the presence of hearths and cooking structures is attested. They can be related, mostly, to food preparation/treatment and consumption activities, repeated in a short lapse of time. Moreover, these activities were performed in an open area and are not linked to specific domestic structures, but probably in a collective sphere, by a restricted number of people.

Several plaster fragments, related both to the cooking platforms and with other accessory structures, were found in these layers of occupation.

A broad use of mud for coatings or covers of huts and an exploitation of raw materials macroscopically different for the manufacture of small structures, as cooking platforms, is observable from the macroscopic analysis of morphochemical and technological features of archaeological materials. The application of compositional analyses, as pethigraphic analyses on thin sections will allowed to characterize composition and firing temperatures allowed to identify potential sourcing areas of clays that have been compared with archaeological material composition to establish the provenance of raw materials.

TH1-35 Abstract 06
Technical evolution of adobe building materials and work specialisation at Ra‘a al-Hadd HD-6 (Oman)
Author - Dr. Azzaza, Valentina, UMR 7041 ArcSoN - Vepmo, Nantes Cedex, France (Presenting author)
Keywords: Adobe composition, Grain size distribution, Work specialisation, Early Bronze Age, Oman

Presentation Preference - Oral

Earthen materials are introduced in Oman at the end of the 4th millennium BCE, when a series of technological evolutions mark the transition to the Early Bronze Age. The very beginning of such transformation, however, remains scarcey understood from the point of view of settlement life and activities, as the Half period is mostly represented by thousands of graves, while very few settlements are known throughout the area. The site of HD-6 has been the object of a detailed large-scale excavation, showing both the emergence of solid architecture and a diachronic evolution in adobe building materials.

Aiming at a better understanding of such evolution, chemical-mineralogical and granulometric analyses of earthen building materials related to the different occupations of HD-6 have been performed on a series of samples. The results suggest that the differences in mud-brick fabrics were a result of mixing and tempering and are not indicative of different raw material sources. Together with the technical characteristics of buildings, such differences show the evolution of materials and methods of construction used on site, hinting at increasing specialisation of work and of the workforce.

TH1-35 Abstract 07
Clay, wood and stone - Neolithic architectures on the channel sea shore, at Lillemer
Author - Laporte, Luc, CNRS, Rennes, France (Presenting author)
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Co-author(s) - Wattez, Julia, INRAP, Paris, France
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Keywords: architetures, mudbrick, neolithic

Presentation Preference - Oral

Shortly after Neolithic reach the channel shores, during the second half of the 9th millennium BC, massive earthen materials have been employed for the construction of a village surrounded by the salt marshes of the actual Bay of Mont Saint-Michel, at Lillemer. These have been used both for the walls and floors, and reflect serial phases of construction. Their preservation is also due to the construction of the bank of a causeway camp, burying previous architectures and surrounding the Hill’s foot, probably at the end of the 9th or beginning of the 8th millennium BC. Mudbricks and earthen materials were still in use otherwise the entry of the camp is now borded by standing stones. Wooden palisades and architectures close this stratigraphic sequence during the second half of the 9th millennium. Whether such changes could be inspired by technical constraints, functional variability of the architectures or cultural choices will also be discussed in this paper.

TH1-35 Abstract 08
Arslantepe domestic architecture: households and technology in the Early Bronze Age
Author - Liberotti, Giovanna, Italian Expedition in Eastern Anatolia, Rome, Italy (Presenting author)
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Keywords: Copper Age, Dwellings destroying or burning, Osaming culture

Presentation Preference - Poster

For the most part of the researchers the house is the main important social, ideological and economic entity of the society in Copper Age in S-E Europe. The materials used to built, the form, the inner space structuring, were seen like being representative
for different archaeological cultures. The moment of building, the utilization and the abandonment are the most important markers of the final chapters of a building life time.

The excavations from Hîrova and Borduani, both tells in S-E Romania, provided important information concerning the Copper Age lifestyle, more precisely the history of the Gumețiya housing.

The most frequent construction technique though consists of a trench in the bottom of which are driven a number of wooden stakes, fairly close together, supporting a lattice of branches to receive the clay. The walls and the floors are plastered with layers of different clay preparation. Usually having two rooms, each has its own rectangular oven. During their lifetime the houses have often been repaired and sometimes, modified. Disposed in rows, the buildings are separated by passageways.

Generally, the final period of their evolution started with the moment when the dwelling ceased to be used by its inhabitants on that purpose. The archaeological information demonstrates that the end of their evolution is not the same for all dwellings. Some of them were abandoned and decayed in time, others were intentionally destroyed and others were intentionally fired. The diversity of all these situations can be interpreted like the result of different causes, and suggest a more complex spiritual life of the communities of the Gumețiya culture in Vth mil. BC.

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**TH1-35 Abstract 10**

**The uses of architectural mud in karstic area at Neolithic: environments techniques and cultures**

**Author** - PhD student Di Pascale, Ambre, University Paul Valéry - Montpellier III, Montpellier, France (Presenting author)

**Presentation Preference** - Poster

In the Languedoc region, we distinguish two main landscape settings: plain zones and karstic environments (called Garrigue). Plains are composed of lagoon areas, layers of gravel, alluvial aquifers. Karst wetlands presents typical cavital shapes, such as sinkholes or avens. The soil there is stony and composed of numerous limestone outcrops, while the sedimentation is low (Guthier, 1975). Both plains and karst wetlands were inhabited territories ever since the Neolithic era. However, the raw material resources that are directly available do modify the builders' choices and highly affect the housing types. In the garrigues areas, one can find a large number of houses that have walls made of dry stones. Conversely, on the coastal plain, unbaked clay architecture was proven on several sites, such as La Capoulière (Mauguio, Hérault) or Mitra (Garons, Gard). Though, this kind of geographical determinism ought to be further qualified: Indeed, cases were seen where environment constraints have certainly been overcome by technical and cultural traditions and had a direct impact on the builders' choices. In the Rhône plain, several dry stone houses were found. Yet these structures are established on soft substratum (Jallot, 2011). Likewise, in karst areas, the discoveries of the use of a combination of stone and mud are numerous. It is true that until recently, and particularly in karst environments, the excavation of settlements was essentially based on the recognition of remains from long-lasting materials – which often precluded mud remains. But new problematics are emerging thanks to the improvement and the adjustment of excavation methods specifically relevant for the study of mud construction materials. Bousargues (Argelliers, Hérault), located in the core of Hérault's garrigues, contained wattle and daub vestiges directly associated to dry stone wall remains. They actually are roof elements (Chazelles, 2008). Fortbousse (Villeveyrie, Gard department) is characterized by its dry stone constructions; although, the excavations revealed the presence of cob elements in the settlement, interpreted at that time as wall elements, with its wattle inserted in the stone walls used as foundation (Louis et al., 1947). Mud is also certified and used as a coating on dry stone walls at Jas Del Biau (Millau, Aveyron), and earth pads were identified on the spot (Jallot, 2000). On the La Vayrâvre site (La Basdè-Pradine, Aveyron), unbaked clay may have been used as a binding agent between the rubble stones. And the walls have seemingly been raised with mud on the foundations (Fouré, Convertini, 2000).

Thus, the use of mud associated with stone constructions in karst environments can be seen in roofs, coatings, as binding agent, on foundation in various layouts. The currently available data is not numerous enough to establish significant recurrences, yet new prospects are emerging. Does the use of mud in construction satisfy technical and/or cultural needs? What is the real impact of environmental constraints on the communities' choices in the Neolithic era? These questions highlight too little explored problematics, particularly regarding the complexity of building systems and to the involvement of the societies in its making.
Archaeological practice reveals a remarkable diversity of approaches to the management of archaeological heritage. Starting with increasingly complex methods of field research and survey, management approaches use laboratory-based analytical approaches and integrate interpretative models. These define the nature of archaeological sites, the natural decay and human processes that influence their survival, the evidence used for reconstruction and for methods of interpretation and display. From single case studies to more general, developed concepts of heritage management, an increasing spectrum of meanings and values engage and inform academic, managerial and social concerns. Financial restrictions and archaeological project limitations create new challenges for all, sometimes frustrating the development of archaeological heritage management practice. Archaeological agency is now faced with old and new constraints together with requirements and pressure to ‘perform’. This suggests an increasing and important role for the profession in cultural heritage management.

The theme invites discussion on issues regarding heritage management: defining cultural value, conservation methods, rationale for restoration, risk management, illicit trade, preventive and rescue archaeology, museum presentation and virtual museums. There is room for discussion on issues related to cultural-heritage regulation, management approaches, legislative and institutional aspects, interpretation, presentation and tourism development, etc.
TH2-01 Abstract 02

Best-practice models for intensively used agricultural landscapes

**Author:** Dr. Strobel, Michael, Landesamt für Archäologie Sachsen, Dresden, Germany (Presenting author)

**Co-author(s):** Dr. Westphalen, Thomas, Landesamt für Archäologie Sachsen, Dresden, Germany

**Keywords:** Grassland, Precision Farming, Rural landscapes

**Presentation Preference:** Oral

In order to protect the rural archaeological heritage in Germany various strategies have been developed since 2010. The paper presents best-practice models of managing monuments in intensively used agricultural landscapes. Especially the conversion of ploughed sites into grassland as well as the application of precision farming systems are different approaches to a better conservation of archaeological remains at risk.

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TH2-01 Abstract 03

Managing rural landscapes in southern England - two case studies

**Author:** Dr. Chadburn, Amanda, Historic England, Bristol, United Kingdom (Presenting author)

**Keywords:** Management, Partnership, Rural

**Presentation Preference:** Oral

The successful management of rural landscapes depends on good partnership working. This contribution to the Round Table will discuss two case studies from Southern England both of which contain some highly significant archaeological remains - the Salisbury Plain Military Training Area, and the Stonehenge and Avebury World Heritage Site, both of which have many and varied stakeholders and needs.

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TH2-01 Abstract 04

Integrated Cultural Landscape Planning at Ancient Corinth, Greece

**Author:** Prof. Wright, James, American School of Classical Studies, Athens, Greece (Presenting author)

**Co-author(s):** PhD Kissas, Konstantinos, Ministry of Culture, Inspectorate of Antiquities of the Corinthia, Ancient Corinth, Greece

**Co-author(s):** Associates Papayannis, Thymio, Thymio Papayannis, Athens, Greece

**Co-author(s):** PhD Sanders, Guy, American School of Classical Studies, Athens, Greece

**Keywords:** Cultural Resource Management, Heritage, Landscape

**Presentation Preference:** Oral

An integrated collaborative master plan has been developed between 2014 and 2016 to protect, preserve and present the 6 square kilometer area that encompasses all the natural and cultural components of the landscape of Ancient Corinth, Greece. It comprises the ancient harbor at Lechaeum, the ancient city, and the citadel of Acrocorinth. These include mixed nature and heritage zones including the (a) wetlands and ancient harbor facilities of Lechaeum and the mixed industrial and agricultural region of the plain, (b) the village of Ancient Corinth and its agricultural outskirts in which are situated the remains of the ancient city, and (c) the agricultural and uncultivated nature zone of the slopes of the great fortified citadel of Acrocorinth. These remains contain over 8,000 years of human occupation with some 270 monuments from the 6th c. BCE through the 19th c. CE still visible for visitors. The planning group is an official committee of the Ministry of Culture, Hellenic Republic, consisting of staff from the Inspectorate of Antiquities of Corinth, the American School of Classical Studies at Athens, and the Ministry of Culture. Essential partners of the team are the consulting firm of TPA and Med-INA (the Mediterranean Institute for Nature and Anthropos). The goal of the integrated plan is to provide a sustainable infrastructure and administrative organization for improving visitor appreciation of the various elements of the designated nature and heritage park by improving access to it and within it for a variety of uses including such things as bird watching, wild and cultivated plant appreciation, and guided paths through the historic monuments and the museum that display the multi-layered history of the famous city of Ancient Corinth. An essential part of the master planning process has been involvement of members of the local population represented by all sectors (citizens, civic groups, civic officials, regional officials). Planning has been aimed at producing proposals for major funding to improve infrastructure and rationalize access, add proper signage and displays, and to consolidate and conserve standing remains. The proposals are orientated to a long-term strategic plan that will seek public (Greek and EU government) and private (foundation and individual) funding. As a part of this endeavor the committee intends to submit proposals for Ancient Corinth to be listed as a UNESCO World Heritage Site.

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TH2-02 Abstract 01

Who commits ‘heritage crimes’?

**Author:** Prof. Karl, Raimund, Prifysgol Bangor University, Bangor, United Kingdom (Presenting author)

**Keywords:** Austria, Civil rights, Heritage crime

**Presentation Preference:** Oral

Archaeologists frequently accuse others (that is, non-professionals) of committing ‘heritage crimes’. But is it a ‘heritage crime’ if no law is broken? Is it not a ‘heritage crime’ if a heritage law is broken by professional archaeologists? And would it be a ‘heritage crime’ if, say, a heritage agency were to excessively apply a heritage legislation to prevent entirely legal activities, and thus unconstitutional restrict fundamental civil liberties? This paper examines who actually commits ‘heritage crimes’ in Austria; and whether it is truly those who archaeologists normally suspect, or whether the worst serial offenders are to be found much closer to home.

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TH2-02 Abstract 02

HERITAGE CRIME: DEFINITION, DEVELOPMENT AND DUTY BASED ETHICS

**Saturday, 3 September 2016, 09:00-11:00**

**Faculty of History, Room 329**

**Co-author(s):** Thomas, Susie, University of Helsinki, Helsinki, Finland (Presenting author)

**Co-author(s):** Ferguson, Natasha, National Museum of Scotland, Edinburgh, United Kingdom

**Keywords:** Heritage Crime, Heritage Protection, Interdisciplinarity

**Presentation Preference:** Regular session

While crimes against heritage are no new thing, the focus within academic debate and policy development has taken something of a centre stage recently. The concept of ‘heritage crime’, or ‘cultural heritage crime’ has come to the fore in literature that draws on input from archaeologists, museologists cultural heritage managers, criminologists, law and policing specialists and others (e.g. Korsell et al 2006, Grove and Thomas 2014). Furthermore, national heritage agencies such as Historic England have prioritised ‘heritage crime’ prevention and prosecution of offenders. This is encouraging on the one hand, since it serves to raise awareness of the impact of crimes that affect cultural heritage both with the wider public and – importantly – with decision-makers. On the other hand, it is clear that the term is still very broad in its definitions, and used in a variety of contexts with which not all observers agree – sometimes revealing quite varied ethical and ontological standpoints. The risk of conflating ‘heritage crime’ with a relatively narrow range of activities, such as the looting of archaeological sites, whilst ignoring other crimes that may also usefully be referred to as ‘heritage crime’ also continues to be an issue.

In this session we invite contributors from different jurisdictions and different disciplines to debate the definition(s) of heritage crime, document how the concept has been developed and applied in different contexts, and ultimately approach this area of research and policy in a way that neither compromises the safety and integrity of cultural heritage nor presumes to define what kinds of cultural heritage matter to different communities.


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TH2-02 Abstract 03

Cultural Resource Management, Partnership, Rural

**Author:** – Oral

**Presentation Preference:**

**Keywords:**

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TH2-02 Abstract 04

Grassland, Precision Farming, Rural landscapes

**Presentation Preference:**

**Keywords:**

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Managing the archaeological heritage

TH2-02 Abstract 03
Good Intentions and Bad Practice; conflicting values in heritage protection

Author - Campbell, Stuart, National Museums Scotland, Edinburgh, United Kingdom (Presenting author)
Co-author(s) - Grove, Louise, Loughborough University, Loughborough, United Kingdom
Keywords: Heritage Crime, Heritage Management, Portable Antiquities
Presentation Preference - Oral

The concept of heritage crime is often summed up by the image of the experienced and professional looter, motivated by financial gain and with some level of technical knowledge. While this model may apply to high profile cases of looting this paper will concentrate on less obvious sources of harm to the historic environment, in particular that grey area where bad practice or carelessness on the part of an individual can cross the line into criminal behaviour. This paper will focus on cultural attitudes, or different cultural perceptions of harm and importance which can lead to damage to heritage being downplayed or not seen as serious on the part of the perpetrator. This paper draws on experiences of working directly with members of the public who find objects, not least metal detector users, and will draw on experiences which are often not discussed or considered at policy level. This will address the presumed role of the market in driving looting, arguing instead that much behaviour is driven by 'single actors', the finder or looter also being a collector, and the desire being to keep rather than to sell an object. Individual motivations include a complex mix of culture and preconceptions which might mean a site is damaged or an object not reported, often by individuals who act with good intentions. The cultural considerations which make an individual consider the law of little importance (while not considering themselves a criminal) will also be discussed. Running through all these issues are divergent and competing perspectives of why the past is important, and how legislation that seeks to protect the past may be perceived by third parties in a wholly different light.

TH2-02 Abstract 04
Museum Security: How big a threat is crime?

Author - Dr. Thomas, Suzie, University of Helsinki, Helsinki, Finland (Presenting author)
Co-author(s) - Grove, Louise, Loughborough University, Loughborough, United Kingdom
Keywords: Europe, Heritage crime, Museum security
Presentation Preference - Oral

Museums are an integral part of the cultural life of societies. Many house archaeological material, functioning as repositories for the archaeological record, as well as sites of public education and dissemination. In addition to their intangible value, many collections also have considerable financial value, and pose a temptation to thieves. In recent years, high profile art thefts from museums, embezzlement by museum staff, and even, regrettably, acts of terror, have drawn attention to the vulnerability of museum institutions. Our research and development project, deployed both in sites on land and underwater wrecks. In Western societies, this iniquitous property loss creates social alarm and calls for an effective legal response against archaelogical plundering.

Archaeological looting represents a serious threat to the survival of fragile and vulnerable special heritage. This threat is deployed both in sites on land and underwater wrecks. In Western societies, this iniquitous property loss creates social alarm because of the common interest in this property. Therefore, public authorities are constitutionally obliged to prevent it, or at least, to try to do so. However, in Spain the response provided by the State and the Autonomous Communities in the fighting against archaeological looting seems to lack the sense of unity required. The inadequacy of many legal instruments, such as the Spanish Historical Heritage Act, other cultural legislation, and the Penal Code is very well known, as there are claims to reform this legislation. However, to achieve this and to improve the State's response to this issue, the analysis of new data on real archaeological looting is required.

The concept of heritage crime is often summed up by the image of the experienced and professional looter, motivated by financial gain and with some level of technical knowledge. While this model may apply to high profile cases of looting this paper will concentrate on less obvious sources of harm to the historic environment, in particular that grey area where bad practice or carelessness on the part of an individual can cross the line into criminal behaviour. This paper will focus on cultural attitudes, or different cultural perceptions of harm and importance which can lead to damage to heritage being downplayed or not seen as serious on the part of the perpetrator. This paper draws on experiences of working directly with members of the public who find objects, not least metal detector users, and will draw on experiences which are often not discussed or considered at policy level. This will address the presumed role of the market in driving looting, arguing instead that much behaviour is driven by 'single actors', the finder or looter also being a collector, and the desire being to keep rather than to sell an object. Individual motivations include a complex mix of culture and preconceptions which might mean a site is damaged or an object not reported, often by individuals who act with good intentions. The cultural considerations which make an individual consider the law of little importance (while not considering themselves a criminal) will also be discussed. Running through all these issues are divergent and competing perspectives of why the past is important, and how legislation that seeks to protect the past may be perceived by third parties in a wholly different light.

TH2-02 Abstract 06
Greater awareness as prevention measure against illegal turnover of archaeological artifacts

Author - Kairiss, Latvia Academy of Culture, Riga, Latvia (Presenting author)
Keywords: archaeologists, the public, heritage, archaeological artifacts
Presentation Preference - Oral

Although Latvian official criminal statistics does not contain data on illegal obtained of archaeological artifacts, significant amount of illegal excavations (especially in the ancient burial places) and publicly available information regarding Internet trade of protected artifacts implies that national archaeological heritage is endangered. According to data provided by State Inspection for Heritage Protection every year about 20-25 criminal proceedings are started regarding looting of archaeological sites.
Different methods are being used in order to prevent and combat illegal obtainment and trade of archaeological artifacts – from explaining the significance of cultural heritage until improvement of legislative acts and introducing more severe punishment for correspondent offences. Proper implementation of any method could lead to positive results, however it is usually hard to find relatively efficient and at the same time speedy solution.

One of practical solutions of the problem has to do with enhancing awareness regarding protected archaeological artifacts and related issues because it would not be correct to assume that legislative acts already contain all the information needed for different audiences (e.g. buyers and traders of artifacts, persons who are interested in history, law enforcement officers etc.). Thus in December 2015 several cultural, law enforcement institutions and other institutions controlling turnover of cultural objects, under the guidance of Latvian Academy of Culture, started the development of “Digital catalog of Latvian archaeological artifacts at risk”.

The “Digital catalog of Latvian archaeological artifacts at risk” contains graphic and textual information regarding the most endangered national archaeological artifacts, as well as other information deemed to be useful for different audiences which could come into contact with archaeological artifacts.

The presentation will give insight into aspects of illegal obtainment of Latvian archaeological artifacts, characterize the “Digital catalog of Latvian archaeological artifacts at risk” and opportunities of its usage.

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Managing the archaeological heritage

Moesgaard Museum is the among the largest and is certainly the newest archaeological and etnographical museum in Denmark. Our new exhibition hall, that opened in 2014, is the frame of permanent exhibitions of primarily Danish archaeology, while temporary special exhibitions highlights international research, lately in an exhibition featuring China’s first emperor Qin Shi Huang and his terracotta army.

Designed by Henning Larsen Architects, the exhibitions hall has won several international rewards, lately the architizer A+ award.

Currently the permanent exhibitions centered on the Bronze Age, Iron Age and Viking Age is open, while the permanent exhibitions of the Stone Age and the Middle Age is under preparation. The aim of this paper is to present a curators view on how we plan our upcoming addition to the permanent exhibition, this time centered around the medieval period. The paper will focus on the interaction between hall and display, including reflections on scale and purpose, process and selection of topic and modes of display as a way of engaging both the community and our international visitors.

Moesgaard Museum - considerations on an upcoming exhibition

Author - Dr. Linus, Jette, Moesgaard Museum, Odder, Denmark (Presenting author)
Keywords: Display, Exhibition, Medieval
Presentation Preference - Oral

Object-based (Distance) Learning:

Local and Global Educational Enrichment from Corinth Excavations

Over the last 120 years, research at Corinth Excavations in Ancient Corinth, Greece, conducted by the American School of Classical Studies at Athens (ASCSA), has produced a wealth of academic publications. Part of the mission of the ASCSA, however, in addition to producing research, is to disseminate the results to wider audiences. Just nine years ago, Corinth Excavations began facilitating occasional educational programs in the museum and on the site of Ancient Corinth for Greek schoolchildren and teachers on a variety of subjects. For example, a program held at the Asklepieion included a dramatic interpretation of Epidaurian healing inscriptions.

Corinth Excavations now has a dedicated staff member for educational outreach thanks to the generous support of the Steinmetz Family Foundation Fellowship; the Museum Fellow is creating enriching lesson plans for Greek and American curricula. In this way, Corinth Excavations can reach learners locally and globally to tell stories about the past. The lesson plans are designed to fit American learning standards for the sixth grade, when students spend one year learning about the entire Eastern Hemisphere; however, suggestions for educators are provided in the lessons for adaptations for younger or older learners.

The lesson plans are based on objects from Corinth Excavations representing periods from antiquity to the present. Themes include water management, healing practices, mysterious rituals, analyzing evidence from the Classical period, cultural achievements of the Roman Empire, pottery designs and styles of the Byzantine Empire, the development of Christianity, interpreting Frankish skeletal material, and taking a digital field trip.

The purpose of the outreach effort is twofold: to create communication between archaeologists and historians who produce new and exciting results with the general public; and to inspire outside audiences to continue to learn about the legacy of Ancient Greece, Roman and Medieval culture. There have been successes and failures in the process of creating educational outreach as it is something new, innovative, and unparalleled for an excavation in Greece. But the successes have shown the power of objects: they tell stories, they inspire curiosity, and they extend learning beyond the classroom and into museum and archaeological site. Corinth Excavations is offering educators something they literally cannot get anywhere else: access to hundreds of thousands of images, videos, notebooks, drawings, plans, maps, artifacts, publications – that tell the story of our collective past.

In order to highlight over a century of research, the unifying message of our educational enrichment efforts is that Corinth was and continues to be a crossroads of cultural, religious, and economic activities for thousands of years. Outreach in Ancient Corinth aims to communicate these interactions among peoples through time and share the legacy of Ancient Greek, Roman and Medieval culture with future generations. In the mean time, it is a project that is changing the role of archaeological excavations and museums.

The Govan Stones: Urban Renewal and Early Medieval Sculpture

How do you communicate the work of an underground Cold War Command Centre? During The Cold War Civil Defense Forces in Denmark had placed a number of Command Centre’s throughout the country to be prepared. The local community had monthly drills, training for the worst case scenario. Command Centre Skanderborg was placed in a bunker build by the German Luftwaffe during WW2 as part of their headquarters in Skanderborg. The bunker was rebuilt in 1963 and in function until 1993. The Cold War was a time of great fear throughout the world. For today’s young people, that can be a bit hard to imagine and understand.

In the process of deciding how to communicate the bunker and it’s function Museum Skanderborg teamed up with the local high school. Through discussion panel a and an innovation project that involved a gamification scientist as well as the museum curators, the work with the students led to the development of an educational roleplay in the Command Centre together with professional roleplay instructors and teachers. The aim of the roleplay is to make the youngsters feel a bit of the panic for the Big Bomb. Several classes have already tested the game. This paper will put forward the concept as an inspiration for others and seek to evaluate on the weaknesses and strengths in the project so far.

“Know thyself” or visitor experiences in open-air museums (case study of Belarus and Lithuania)

Archeological open-air museums generate participatory multi-dimensional environment, atmosphere of illusionary past and immersive folk culture. The special design and variety of interpretation methods enable visitors to dive in history and experience cultural diversity by means of tangible and intangible heritage, dialogue and celebration; to rediscover their national and cultural identity, or, in other words, get to “know thyself”, as Strasens’s motto states. The paper will analyze the augmented space and dynamic communication of open-air museums as the complex environment for creating memorable and meaningful visitor experiences. The geographical scope of the research will include the open-air museums in Belarus and Lithuania.
Open up again: a local museum by the lake aims at presenting and analysing the needs, the goals, the risks, the achievements and the failures of the renovation project of a trigger for a wider inclusive and equal process to access the local archaeological heritage? Trevignano Romano has 10% of possible to connect it back to its audience, turning it into one of the voices of its community, and at the same time into ‘a bridge’ museum that just a few years ago has been defined as a ‘silent’ institution, not in contact with its people and its territory. Is it weakness into a strength, considering differences as the chance for plural narrations?

Heritage reforms at national level, on the other hand the pattern seems to be less consistent at a regional and local level, where protection, seems to be the only successful guideline today. If, on one hand, this seems to be the main issue of recent Cultural a Copernican revolution, the shift from a point of view mainly focused on the multiple ways of fruition, rather than those of mere educational role of these institutions.

More than others, local museums are deeply connected both to their territories and their communities: their role in education and the high potential in reflecting and influencing cultural practices is a well known issue, offering guidelines for any strategy aiming at turning any museum into an example or a good practice. It has been recently said that Museums should be “involved not simply in presenting or preserving but opening up a space for dialogue – about art, about culture, about humanity” (T. Golden 2016) in other words, the challenge seems to be one related to the creation of a new asset, mainly balanced on the social and educational role of these institutions.

For those archaeological Italian museums traditionally created and intended as defences of their collections, the need of a Copernican revolution, the shift from a point of view mainly focused on the multiple ways of fruition, rather than those of mere protection, seems to be the only successful guideline today. If, on one hand, this seems to be the main issue of recent Cultural Heritage reforms at national level, on the other hand the pattern seems to be less consistent at a regional and local level, where different political, economic and cultural strategies create a multifaceted and changeable reality. Is it possible to turn this element of weakness into a strength, considering differences as the chance for plural narrations?

The management of the Etruscan and Roman Museum of Trevignano Romano, located by the touristic shore of the Bracciano lake, North of Rome, recently changed its strategic assets in the name of diversity and inclusion. That is a challenge for a local museum that just a few years ago has been defined as a ‘silent’ institution, not in contact with its people and its territory. It is possible to turn this element of weakness into a strength, considering differences as the chance for plural narrations?

Curation of the Vilnius Museum of Antiquities - from the illegal Art Market to the Rebirth of a Museum

The Europhus Krater: from the illegal Art Market to the Rebirth of a Museum

The Ephorhous Krater: from the illegal Art Market to the Rebirth of a Museum

In this presentation, I seek to historicize the curating of the Vilnius Museum of Antiquities (today’s National Museum of Lithuania) in order to highlight the role museums played in the challenge between nationalism and imperialism in the nineteenth-century Russian empire. Debates about display and curation were central to the rise of archaeology in that epoch, and in Russia, they were also closely associated with the fifteen archaeological congresses, meeting every three years from 1869, were the singular academic and/or professional confinements held in Tsarist Russia; the 9th was held in Vilnius in 1893. In the 1840s, when archaeology was first beginning to blossom, beginning as more of a vocation than a science, Count Eustachy Tyszkewicz and his brother Konstantin moved from simply collecting Italian art to excavating approximately 200 barrows around their native Logis, in present-day Belorussia. The Russian word for what we call “amateur” is literally as “lovers,” and this better captures the sense of this first generation of essentially noblemen who combined a passion for archaeology with similar fascination with ethnography and history. In 1842 the Tyszkevich brothers opened three rooms in one of their palazzos into the first local Museum of Antiquities, more than a curiosity shop. It was visited by dozens of people in its first year. In 1856, in concert with the anticipated liberalizing policies of new Tsar Alexander II, the collection was transferred to more space in the Library of the former University, which had been closed in 1832 following the Polish rebellion. Unfortunately for them, the second Polish rebellion of 1863 promised the closing of this Commission, thereafter designated as only intended to be “temporary” and the redistribution of much of the museum to others, primarily Moscove’s Rumianskve Museum, a critical repository of historical artifacts.

One of the first orders of business following the rebellion was to re-curate the museum. Count M. N. Muraev, who would receive an honorific “Vilenski” added to his surname in recognition of the favor with which he instigated the de-Polonization of the Northwestern Region (Lithuania and Belorus) organized a commission for the inspection of the objects on display in the Museum of Antiquities. The clash between Tyszkevich and the Commission, and the subsequent congress, illustrate the use of archaeological artifacts to dispute an identity during the Age of Empire.
In 2013 “Dagana samihal”, a magazine for decision makers in the public sector wrote: “The trend is hopeless. 19 Slovenian municipalities have shrunk every year for two decades. Twelve of them may have died out before the turn of the century. In 2070, Ljusnarsberg and Strömsund will be the first in line for the precipice, if the population continues to decline at the same rate as now.” Imagine bearing a citizen in Kopparberg, the small town in the municipality of Ljusnarsberg, and waking up to that announcement! Well, you probably wasn’t surprised, but still. My municipality has a sentence, a death sentence and a given date when it’s all good, by time to pack the things and leave.

Several of the inhabitants in Kopparberg wasn’t asked at all when national media called out the message. And the inhabitants in the other small municipalities in the former so mining district of Sweden is not asked for any opinion either. Meanwhile, a group of eleven artists that bought an old mine in the area thought “Hey, what about the locals, asylum seekers, art, music, heritage and the future of this place?” And suddenly, one year afterwards I was standing on an ice cold day with a director, journalist, artist, bike... a 23 year old dentist from Syria, an old man from Iraq, the local drunk, councillor and a bunch others, making an archaeological excavation of a public pinboard, with the overall theme: excavating the future of Kopparberg...

In this presentation I will give two examples of empowering the local community using heritage. The first example above is in great contrast to the other, where local school children excavates an old cottage where the ferryman once lived. But both are examples of how heritage and archaeology can be used to revive history and let the locals be proud of their cultural heritage, weather or not they have lived there for generations or came there last week.

From an archaeological point of view, Baranja is an extremely rich and valuable region. However, as with all other aspects of society, certain well-known and systematically excavated sites always cast a shadow on the smaller ones which rarely get a chance to be properly excavated and/or presented to the public.

The aim of this contribution is to show how all of this can be changed by applying the ‘where there’s a will, there’s a way’ approach in a situation where the local community never saw culture as something important and potentially lucrative, both financially and socially.

This roundtable aims to discuss how to deal with this phenomenon of non-professional archaeologies. Discussants are asked to consider several (or all) of the following questions:
• What is the normal process for dealing with public finds in their country, in policy and practice?
• How do professional archaeologists use public finds in research and heritage management? What are the legal, professional and ethical obstacles in doing so? What criteria determine whether a public find is acceptable and useful in professional practice?
• What role do public finds play in archaeological communication? How are they represented towards wider audiences, in professional discourse, in the press and in other media? Are there legal, ethical, practical limitations to the use of public finds in museums?
• To what extent can the public participate in professional trajectories of research, management and communication? Is amateur archaeology discouraged, limited to certain stages of the process, or even prohibited? How well is it accepted by and integrated in professional archaeology? What historical, legal, sociological and other factors have an impact on this involvement?
• Is there a need for better international coordination, given the mobility of both artefacts and people (e.g. metal detectorists)? Can we come to a common ground for policy and ethics?
amount of research being undertaken by the voluntary sector, an assessment of its research potential and benefit for inclusion into our research resources and a direction for promoting the active participation and involvement of community groups in the development of professional research resources.

TH2-04 Abstract 02

The impact of local archaeology societies in England

Author - Roberts, Hayley, Bournemouth University, Poole, United Kingdom (Presenting author)

Keywords: Amateur Archaeology, Community Archaeology, Professional Archaeology

Presentation Preference - Oral

Non-professional archaeology was an integral component in the development of the archaeological profession in England. As the profession developed it distanced itself from the amateur sector and, on occasion, the relationship became fractious. However, now both sides have matured and harmony is reining more widely, although the relationship is still complex. Local archaeology societies played, and still play, a key role in the historic mediation process, bringing these two parties back together, but what are local archaeology societies, what do they do and why do they do it? They are rarely discussed or credited in archaeological literature but in order to bring total harmony it will be crucial to understand them and the impact that they have. Local archaeology societies in England range from county societies, who produce journals and manage museums to small 'hobby' groups with a primary interest in excavation and from metal detector clubs to groups that focus purely on archival research. Often they use elements of professional practice but sometimes components are missing. This can have a crucial effect on their impact. Using case studies gathered from the perspective of both amateurs and professionals in the south of England, this presentation will discuss archaeological discoveries made by and the research processes used by local archaeology societies. It will also consider the impact of their communication within the profession as well as the wider public.

This will demonstrate that not only do local archaeology societies have significant impact on archaeological understanding and on the archaeological profession but that they have even greater potential. By bringing clarity of understanding about local societies, this presentation will also demonstrate that the distinction between amateur and professional archaeologists is a little blurred in ways that professional archaeologists might not expect.

TH2-04 Abstract 03

Issues of metal detecting in Finland

Author - Dr. Wessman, Anna, University of Helsinki, University of Helsinki, Finland (Presenting author)

Keywords: communication, metal detecting, public engagement

Presentation Preference - Oral

In Finland, the use of a metal detector is usually allowed without a separate permit, even though it is regulated by such laws as the Antiquities Act (1963). The Antiquities Act protects ancient monuments, including a protected area around monuments of 2 meters. According to this same Act, finds over 100 years must be delivered immediately to the National Board of Antiquities (NBA) or a Provincial Museum. The finder must also provide information regarding the location of the find. The NBA can then decide if they want to redeem the find to their collections or not. Even though there have been reports in the media of “nighthawking” in Finland I argue that most hobbyists want to detect responsibly. However, it’s clear that the legislation is out of date. The law and regulations are also difficult to interpret, creating frustration on both sides.

At the Espoo City Museum the growing interest in archaeology and metal detecting was understood in the beginning of 2012 - Oral

The presentation deals with metal detecting against the Finnish legal background, the questions of heritage management and deposition of stray finds in archaeological collections as well as the challenges in communication between the authorities and detectorists.

TH2-04 Abstract 04

Aspects of metal detecting in Finland

Author - Niukkanen, Marianna, National Board of Antiquities, Helsinki, Finland (Presenting author)

Co-author(s) - Karttunen, Jutta, National Board of Antiquities, Helsinki, Finland

Keywords: Finland, metal detecting, stray finds

Presentation Preference - Oral

Metal detecting has become a popular hobby in Finland. No permission is needed to use a detector, and there is a lot of material easily available on the Web that can lead to new archaeological findings. The amount of archaeological artefacts and sites found every year by detectorists is significant, and now also foreign “treasure hunters” have shown interest in detecting in Finland.

The presentation deals with metal detecting against the Finnish legal background, the questions of heritage management and deposition of stray finds in archaeological collections as well as the challenges in communication between the authorities and detectorists.

TH2-04 Abstract 05

Stone shaft-hole axes: between professional and non-professional archeology

Author - Linevich, Siarhei, Institute of history NAS Belarus, Minsk, Belarus, Republic of (Presenting author)

Keywords: archaeological collections, museum, stone shaft-hole axes

Presentation Preference - Oral

The role of non-professional involvement in the development of archeology and the importance of public participation in the creation of the data base for archaeological researches will be considered by the example of such category of archaeological finds as a stone shaft-hole axes. The study is based on the history of creation collections and researching of stone shaft-hole axes at the territory of Belarus.

The first collections of the stone drilled artifacts in Belarus dates back to the middle of the XVI century. But they had a little connection with scientific approach and they explain the influence of the ideas of the Renaissance era to the magnificent. The main way of replenishment of these collections was reclamation or confiscation. Another relationship with stone shaft-hole axes formed in the rural environment. Peasants have seen their pragmatic and magic sense in this category of artifacts. Since the XVII-XXI centuries ethnographers noted the existence of different popular legends about the origin of the stone axes, described their used by peasants.

There was a surge of interest in archaeological finds in the 19th century and as a result an increase of a private archaeological collections in Belarus. It should be noted that the archeological studies were rare and sporadic. But the number of stone-shaft-hole axes in private collections was more than 2 thousands.

After the fall of the Russian Empire and the creation of the USSR the system of museums was founded. The main function of them was accumulation of all sorts of antiquities. The private collections became the basis of the museum collections of stone axes was. The additional source of replenishment of museum collections was the work of professional archaeologists. Simultaneous the private collections continue to exist.

After the WW2 the additional source of accumulation of archaeological artifacts became school museums. Today, the school museums sometimes has better collection of stone axes then the state than the public museums.

TH2-04 Abstract 06

Blunt instruments or intelligent solutions?

Author - Moeller, Katharina, Bangor University, Bangor, United Kingdom (Presenting author)

Co-author(s) - Karl, Raimund, Priyagol Bangor University, Bangor, United Kingdom

Keywords: heritage laws, metal detecting

Presentation Preference - Oral

Compared to the UK the heritage laws in Germany and Austria are much more restrictive when it comes to metal detecting. But are these stricter laws really an effective deterrent? If so, the number of metal detectorists should be higher in the UK than it is in Austria and Germany. However, due to the stricter laws, the actual number of metal detectorists in the latter two countries is unknown.

To compare numbers of metal detectorists in the countries mentioned above, this case study looks at metal detecting online fora, especially their membership numbers. These indicate that there are more metal detectorists in Germany than there are in the UK. This suggests that laws alone do not prevent people from looking for archaeological material. Laws do, however, influence other patterns of behaviour, particularly the reporting of finds to the authorities by their finders. Stricter laws do not seem to deter metal detecting, they deter finds reporting.
Managing the archaeological heritage

There are a lot of communities and events, which present their information and materials in the Internet. Thanks to them non-professional archaeologists can learn a lot about archaeology. In the VK there are many communities and pages, where professional archaeologists introduce new information and discoveries and try to do this using non-professional language. These information could help to understand better archaeological work to the non-professionals and to involve more people in science. In my poster I want to present some examples of these communities.

Presentation Preference - Poster
Environmental Impact Assessment and Heritage Impact Assessment: improving the relationship

Author: Dr. Young, Christopher, Christopher Young Heritage Consultancy, Bicester, United Kingdom (Presenting author)
Keywords: cooperation, Environmental Impact Assessment, Heritage Impact Assessment

Presentation Preference - Oral

In values-based approaches to heritage management, some form of assessment of significance of the heritage asset, and of the impact on that significance of any proposals for development or change is essential. It is not possible to judge what will harm it or enhance it, and to take appropriate decisions to protect heritage or mitigate damage. Environmental Impact Assessment (EIA) is one methodology for doing this and one that is mandatory for some types of development within the EU. Its scope includes heritage alongside other environmental aspects and many other things. The extent to which this works for heritage in various parts of Europe is sometimes debated and there are concerns that inclusion of heritage within a wider assessment system does not do it any favours. It has been argued that, in the EIA system, the overall heritage significance of a place is disaggregated, for example into archaeology, protected buildings, and landscape, and that impact on it is not assessed holistically. EIA is also applied very selectively and many smaller development proposals will not require formal evaluation.

Alongside EIA, therefore, the practice of Heritage Impact Assessment has developed with its own published guidance. It is now recommended for all developments affecting World Heritage properties and HAIs are frequently requested by the UNESCO World Heritage Committee. At the other end of the scale, national systems (for example in the English National Planning Policy Framework (NPPF) and Planning Practice Guidance (PPG)) often now ask for assessments of impact on heritage for many cases which will never require EIA. They can recommend use of existing HA guidelines or request simpler heritage statements.

The de facto existence of two parallel systems which can apply to the same site can be counterproductive to good decision-taking as well as wasteful of resources. There is currently considerable research interest in Europe on the use and effectiveness of HIA. One clear avenue for research is how to improve the effectiveness of EIA in assessing and giving due weight to impacts on the heritage. Any proposal to improve treatment of heritage in EIA needs also to look more widely at developing a more holistic approach to heritage as a whole. Working with existing initiatives on HIA could be a fruitful way to proceed.

Assessing the Impact: Spatial Planning, Cultural Heritage and EIA in England

Author: Victoria Donnelly, University of Oxford, Oxford, United Kingdom (Presenting author)
Keywords: EIA, Environmental Impact Directive, Spatial Planning

Presentation Preference - Oral

Our understanding of English cultural heritage is significantly influenced by the Environmental Impact Directive and EIA requirements; for example, the undertaking of archaeological fieldwork and the spatial distribution of the resultant archaeological record is strongly determined by projects which are subject to EIA. This can be illustrated through the comparative examination of data held within Historic England’s Excavation Index, the Archaeological Investigations Project dataset and the Grey Literature Library held by the Archaeology Data Service in York.

Interestingly, EIA regulations also frame archaeological investigative work that is not undertaken under the direct influence of the Environmental Impact Directive, such as cultural heritage investigation and archaeological fieldwork undertaken within the context of a DC0 application or a Hybrid Bill. Although these types of planning applications and regulations fall outside of the Environmental Impact Directive, they are heavily indebted to the process of EIA which shapes the resultant approach, project design and method.

Through a discussion of projects subject to the Environmental Impact Directive as well as projects undertaken within the context of a DC0 application or Hybrid Bill, this paper intends to explore the influence of EIA requirements on spatial planning and cultural heritage in England and how they shape our understanding of the English archaeological record.

Preventive archaeological excavations & motorway construction projects in Romania

Author: PhD Bors, Cornia Ioana, National History Museum of Romania, Bucharest, Romania (Presenting author)
Keywords: archaeological heritage management, EIA, motorway construction projects

Presentation Preference - Oral

Since year 2000 the management of the archaeological heritage in Romania had to face a new and challenging reality: the large-scale rescue/preventive archaeological excavations occasioned by the construction of the motorway networks developed along the Pan-European corridors. The National History Museum of Romania was involved since the beginning in coordinating a series of major archaeological projects developed in such situations. The presentation will briefly address a series of key aspects related to the round table’s topic, namely an overview of the most important archaeological projects undertaken in connection with motorway construction projects, the operational framework for preventive archaeology in such cases according to the national legislation and the correlation with the EU regulations, as well as a series of necessary improvements still required for drafting and implementing a valid archaeological management strategy in order to mitigate the impact on the archaeological heritage in the context of road infrastructure projects.
25 YEARS LATER: CHANGES AND CONJUNCTURES IN PREVENTIVE (DEVELOPMENT-LED) ARCHAEOLOGY IN FORMER ‘EASTERN’ EUROPE

Thursday, 1 September 2016, 14:00-18:30
Faculty of Philology, Room SP2

Author - Novaković, Predrag, University of Ljubljana, Faculty of Arts, Ljubljana, Slovenia (Presenting author)
Co-author(s) - Horvat, Milan, VIA MAGNA Ltd., Vrbovský, Slovakia

Presentation Preference - Regular session

Due to the previously uncompetitive economies and outdated technological infrastructure, a great deal of former ‘eastern’ countries still remained largely underdeveloped. Compared to the average of the EU 15 in 1990 and 2014, only a few CE countries improved their GDPs from 40% to 80%, while others (Baltic countries, countries which stemmed from the former USSR) did not reduce the relative distance at all, their GDP on average remained less than 15%. This should not be ignored when reflecting on the preventive archaeology in the countries in question. Prior to 1990s all heritage services were the domain of public/state institutions and the overall disciplinary structure and practice was greatly dominated by the academic institutes with institutes at national academies at the top (the Soviet-based model). In most cases this structure has survived until the present day, and is still exercising influence (formal and informal) on preventive archaeology. One of the consequences is the view that preventive archaeology to a certain degree still needs to serve academic agendas (and institutes). On the other hand, in some countries, though they kept to the Soviet-based model of national institutes, preventive archaeology achieved a much greater level of autonomy, with its own priorities and new practices and forms of organization, and some countries even made more radical changes. While, in general, all former ‘eastern’ countries ratified the La Valetta convention, the status and practice of preventive archaeology varies so greatly that it can hardly be observed through a single theoretical framework. The session is aimed at exploring different conceptual trajectories and practices developed in preventive archaeology in the last 25 years. Papers presenting major changes in legislation, economic status of preventive archaeology, changes in its social role, labour markets, level of technology and expertise, and about the profession of archaeology in general, are invited.

Keywords: Eastern Europe, preventive archaeology, rescue archaeology

Until 1990s and the abolishment of socialist/communist regimes in ‘eastern’ European countries, archaeological service (institutions and practice) in protection of cultural heritage was fully in the hands of state bodies which had to plan funds in their state budgets for performing their duties. These funds were normally coming from taxes, and then redistributed. The principle polluter-payer was rare, only occasionally used, and normally not aimed at complete cover of the costs of archaeological protection. There were no direct effects on cultural heritage, and its protection not only in ideological terms but in terms of pronounced atavism as well, while the latter saw culture and heritage as special value of state (and public) which could not be let autonomous in its development.

Political and economic changes after 1990 had very different consequences in different countries in the field of preventive archaeology, and even the countries which shared similar or even equal systems of organization and practice of heritage protection (e.g. in former Yugoslavia or in the USSR) soon developed quite different systems which ranged from very ‘liberal’ to very ‘strict’ ones. In this respect it is interesting to note that ‘liberal’ systems of heritage protection which adopted more concepts of preventive archaeology and coupled them with the emergence of private market of archaeological services, while countries with ‘conservative’ systems openly (or in disguised form) expressed opposition to preventive strategies. The two conjunctures – ‘liberal’ and preventive attitude associated with heritage and development of private market of heritage services – are not necessarily directly correlated (e.g. case of preventive archaeology in France), but this correlation seems higher in the case of former ‘eastern’ countries. However, looking at different experiences in the last two decades, another set of questions should be placed here – who, in what status, and to which degree, participates in the market of preventive archaeology as private entrepreneur? Do we speak of real entrepreneurs or ‘disguised’ public institutions? Is ‘open’ participation of public actors (e.g. model of INRAP in France) securing better control? And, what are, in the end of the day, the benefits for heritage, and benefits for actors, and public?

TH2-07 Abstract 01
Introduction. From rescue to preventive archaeology: 25 years of difficult journeys

Author - Prof. Novaković, Predrag, University of Ljubljana, Faculty of Arts, Ljubljana, Slovenia (Presenting author)
Co-author(s) - Horvat, Milan PhD, VIA MAGNA s.r.o., Vrbovský, Slovakia

Keywords: Eastern Europe, preventive archaeology, rescue archaeology

Presentation Preference – Oral

The development of preventive archaeology in the Czech Republic is characterized by the beginning of the economic crisis in year 2008 boom in the number and financial volume of archaeological researches and the development of private companies in the archaeology. In the years 2008 - 2015 passes through the whole archaeology crisis, which is characterized by strengthening the influence of the central institutions, especially the Czech Academy of Sciences (CAS), based on Soviet-type research organizations. The development of the private sector in archaeology is limited by inadequate and outdated legislative framework. The last law regulating the archaeology is from year 1987. This law has been amended several times. The law does not give sufficient legal framework for preventive archaeology and in practice frequently updated customary legal principles. It is to try to interpret the present framework as a system of dual authorization, which represents one step permits the Ministry of Culture and a kind of second stage authorization with the CAS. It is part of the CAS effort to actively exercise control of the territorial jurisdiction of archaeological organizations and their burden is disproportionate control ambitions. Yet completely lacking standardization of archaeological activity and standard of preventive archaeology research.

Mafes convention is in the Czech Republic interpreted by the authorities as a binding international treaty and by archaeologists as support for strictly archaeological preservation. Typical is the small proportion of archaeologists on the legislative and institutional basis in Slovakia

Author - Dr. Michalik, Tomas, Cultural Heritage Consulting Ltd. / Slovak Association of Archaeologists, Trnín, Slovakia (Presenting author)

Keywords: archaeological heritage, law, Slovakia

Presentation Preference - Oral

There is no doubt that Slovak republic belongs to examples of dynamic legal, economic and social changes since the Velvet Revolution in 1989, which were reflected also in the archaeology and archaeological heritage management. Formerly fully governed, managed and covered by the state, this field became much more heterogeneous during last decades. Although necessary changes were needed and therefore expected, their quickness caused a lot of important consequences. From the point of view of legislation, all important laws were adopted after 2000, although there were previous laws, of course. First of all, adopting of new Monuments and Historic Sites Act N. 49/2002 Coll. is definitely the most relevant change. Under this act, major responsibility for the archaeology was transferred from Archaeological Institute of Slovak Academy of Sciences (which is in fact scientific body, without decisive competences) to state administration. Monuments Board of the Slovak Republic was established, with its 8 regional branches, which are most relevant actors in the archaeological heritage management, due to their strong position and deep and detailed competences. Regional Monuments Boards are the first-contact institutions not only for field archaeologists, but also for landowners, developers or other persons conducting activities with a potential to influence archaeological heritage. They decide on necessity of conducting of research, its conditions and time frame as well as on offences or other illegal activities. Monitoring and supervision bodies are also responsible for this area.

The Monuments and Historic Sites Act also deals with archaeological cultural monuments, protection of archaeological sites in spatial decision-making process, individual finds and other relevant archaeological issues. Legal regime of archaeological finds in museums is regulated in Museums Act Nr. 206/2009 Coll. Malta Convention was ratified by the president of the Slovak Republic in 2000 and published in Collection of Laws in 2001.

In order to fight against treasure hunters and their illegal activities, a lot of legislative work was done since 2011, when amendment of Penal Code with its strict ban of unauthorized use of metal detectors came into force. On the other hand, institutional support for this legislation is still not satisfactory as it’s built mainly on individuals. However, there is a number of persons who were solved by the police.

TH2-07 Abstract 03
25 years of Preventive archaeology in the Czech Republic

Author - Mgr. Kucharcík, Milan, Librář o.p.s., Praha 9, Czech Republic (Presenting author)
Co-author(s) - Siroky, Radek, ZIP o.p.s., Plzeň, Czech Republic

Keywords: Czech Republic, Preventive archaeology, private sector

Presentation Preference – Oral

The situation in the Czech Republic is characterized by the beginning of the economic crisis in year 2008 boom in the number and financial volume of archaeological researches and the development of private companies in the archaeology. In the years 2008 - 2015 passes through the whole archaeology crisis, which is characterized by strengthening the influence of the central institutions, especially the Czech Academy of Sciences (CAS), based on Soviet-type research organizations.

Development of the private sector in archaeology is limited by inadequate and outdated legislative framework. The last law regulating the archaeology is from year 1987. This law has been amended several times. The law does not give sufficient legal framework for preventive archaeology and in practice frequently updated customary legal principles. It is to try to interpret the present framework as a system of dual authorization, which represents one step permits the Ministry of Culture and a kind of second stage authorization with the CAS. It is part of the CAS effort to actively exercise control of the territorial jurisdiction of archaeological organizations and their burden is disproportionate control ambitions. Yet completely lacking standardization of archaeological activity and standard of preventive archaeology research.

Mafes convention is in the Czech Republic interpreted by the authorities as a binding international treaty and by archaeologists as support for strictly archaeological preservation. Typical is the small proportion of archaeologists on the
preparation of building and development-led projects. In the structure of private sector in the Czech archaeology we find large and small companies, nonprofit organizations exclusively. The companies are purely archaeological and also joining other professional activities (for example environmental research, building history). Irreplaceable is a role of private entities in improving the quality of standards, especially in the case of development-led archaeological projects (final reports). Gray zone without a clearer anchoring represent service companies without expertise stuff, which are working for public and government institutions.

After 25 years in the Czech Republic still completely the absence of the existence of conditions for private sector activity in archaeology. Preventive archaeology in the Czech Republic so far been rather limited. The Czech archaeology is more oriented towards on-site conservation, and thus led to a certain stagnation of inventorying of new archaeological objects. Nevertheless, data exchange between the state Register of Cultural Property and the Real Estate Register should be mentioned as an important achievement in harmonization and information on restrictions of land use available for archaeological heritage managers and users. Archaeological excavations, or “protection through documentation”, can be identified as the main strategy of archaeological heritage protection. Development-led archaeology became the main form of scientific enquiry. As the contract archaeology system was developed, great attention is paid for excavations’ quality control procedures. Formalized requirements for archaeological excavations (where and how archaeological excavations should be conducted) became a legal norm since 2011. These requirements also demand to protect archaeological heritage constructs in situ. Formalized requirements have to adjust conditions for contract archaeologists’ competition as well. Nevertheless, objectification of criteria of archaeological research is modeling a situation of “typical archaeological excavations”, and thus in the professional community raises discussions concerning the scope of scientific information obtained during the archaeological research. Interpreting of archaeological heritage can be seen as means of constructing of local and national identity by various social and cultural groups. Nevertheless, interpreting of archaeological heritage by state bodies and thus reorientation of management perspective from “archaeological object” towards its “user” is still needs to be developed.

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**TH2-07 Abstract 04**

**Archaeological Heritage in Lithuania after 1990s: Defining, Protecting, Interpreting**

**Author:** Dr. Poškrienė, Justina, Vilnius University, Faculty of History, Vilnius, Lithuania (Presenting author)

**Keywords:** archaeological heritage, assessment, protection

**Presentation Preference:** Oral

Legislative decisions facilitated notable changes in the field of cultural and archaeological heritage protection in Lithuania after 1990s. National legislation was essentially modified twice: in 1995 and in 2005. Significant changes can be observed in the field of defining (accounting, assessment and listing), protecting (regulations on excavations’ procedures or “protection through documentation”), preservation of archaeological remains in situ, as well as interpreting (by state bodies and public) of the archaeological heritage.

There are approx. 3000 archaeological heritage objects listed in the state Register of Cultural Property. The procedure of listing has been changed several times after 1990s. Since 2005, a heritage object is listed in the state Register of Cultural Property after an assessment council decides that a property is in the need of legal protection. The significance, the valuable properties of objects or sites of cultural heritage are assessed, and the boundaries of territories are defined by the immovable cultural heritage assessment councils as well. The specialized assessment council for archaeological heritage was established in 2012. State administrative and technical resources were concentrated mainly on preparation of new documentation type for already listed heritage objects, and thus led to a certain stagnation of inventorying of new archaeological objects. Nevertheless, data exchange between the state Register of Cultural Property and the Real Estate Register should be mentioned as an important achievement in harmonization and information on restrictions of land use available for archaeological heritage managers and users.

Archaeological excavations, or “protection through documentation”, can be identified as the main strategy of archaeological heritage protection. Development-led archaeology became the main form of scientific enquiry. As the contract archaeology system was developed, great attention is paid for excavations’ quality control procedures. Formalized requirements for archaeological excavations (where and how archaeological excavations should be conducted) became a legal norm since 2011. These requirements also demand to protect archaeological heritage constructs in situ. Formalized requirements have to adjust conditions for contract archaeologists’ competition as well. Nevertheless, objectification of criteria of archaeological research is modeling a situation of “typical archaeological excavations”, and thus in the professional community raises discussions concerning the scope of scientific information obtained during the archaeological research. Interpreting of archaeological heritage can be seen as means of constructing of local and national identity by various social and cultural groups. Nevertheless, interpreting of archaeological heritage by state bodies and thus reorientation of management perspective from “archaeological object” towards its “user” is still needs to be developed.

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**TH2-07 Abstract 05**

**Implementation of La Valletta convention: the Croatian perspective**

**Author:** PhD Sirovica, Filomena, Archaeological Museum in Zagreb, Zagreb, Croatia (Presenting author)

**Keywords:** Croatia, in-situ preservation, preventive archaeology

**Presentation Preference:** Oral

European Convention on the Protection of the Archaeological Heritage, released by the Council of Europe in 1992, had a significant influence on the practice of development-led archaeology in Croatia. Ratification of the Convention in 2004 and its implementation in legislation brought drastic changes by which archaeology became a part participant in planning of spatial and infrastructural development. But the changes did not include the full range of requirements needed for the successful practice of preventive archaeology.

Considering this problem it becomes observable that the attitude expressed in the Convention considers prevention as a prerequisite for the preservation of cultural heritage, and, rather than through salvage archaeological excavations, acts through active participation in the early stages of planning procedures. This process requires a developed set of tools which enables informed decision-making on the treatment of archaeological remains. As a part of the same process, concept of care and protection of archaeological monuments is being replaced with an approach directed towards the management of archaeological heritage where the main focus is placed on the issue of long-term sustainability and thereby the issue of in-situ preservation of archaeological heritage.

As Croatian archaeology is still not turning in that direction, this paper will be focused on consideration of factors which can fulfill the requirements for implementation of efficient preventive archaeology, but also the ones which are currently preventing Croatian archaeology in changing attitude towards sustainable heritage management.

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**TH2-07 Abstract 06**

**Commission for archaeological research (CAR) in Slovenia**

**Author:** Brilnik, Danijela, Zavod za varstvo kulturne dediščine Slovenije, Celje & Maribor, Slovenia

**Co-author(s):** Kaizer Cažnik, Mihela, Zavod za varstvo kulturne dediščine Slovenije, Celje & Maribor, Slovenia

**Presentation Preference:** Oral

The role and significance of the Commission for archaeological research (CAR) in the system of preventive archaeology in Slovenia (Danijela Brilnik & Mihela Kaizer Cažnik, Institut for Protection of Cultural Heritage of Slovenia). CAR, though previously existed in different forms and structure, was re-established in 2009 as a counselling body of the Minister of Culture, who is according to the Cultural Heritage ACT (2008) responsible for issuing the legal permits for any physical intervention into objects designated as cultural heritage. To CAR number of experts from conservation, museum and academic fields in archaeology, according to the Regulations on archaeological research, all requests for reasseases (preventive, academic or other) are obligatory addressed and reviewed from a number of pointviews (reasons for research, competency of research team, correspondence with conservation plans and recommendations, other legal and financial aspects). After review, CAR issues recommendations to the Minister for signing the permits. Since its establishment in 2009, CAR is maintaining a data base of more than 1500 reviewed research projects proposals. This data base is excellent source for following the actual developments and trends, especially in preventive archaeology (more of 95% of proposals fall into this category) in Slovenia. These trends will be presented in the paper.

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**TH2-07 Abstract 07**

**Perspectives of development-led archaeology in Serbia**

**Author:** Rajković, Tonko, University of Cambridge, Cambridge, United Kingdom (Presenting author)

**Presentation Preference:** Oral

Depending on the political discourse, archaeological tradition, history and the perception of heritage, different countries adopted the La Valletta Convention in different ways. Especially remarkable was the introduction of development-led archaeology (DLA) in countries with former communist/socialist regimes. Serbia is a country with an archaeological history stemming from the 19th century; with conventionally good archaeological practice, and an exceptional regional academic tradition. The modern state of perspectives of development-led archaeology in Serbia.

However, despite having a reliable network of institutions and a strong academia, the modern recent motorway projects demonstrated the range of problems which could arise from development-led excavations. It has proven that the transformation of archaeology from an academic discipline into an effective (public and/or commercial) in preventive strategies does not represent a small step. Deeply entrenched habits from Serbia’s rich and long archaeological tradition could not have been transformed at such a short time.

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**TH2-07 Abstract 08**

**Preventive Archaeology at the Reserve Bench**

**Author:** Petricic, Milos, Center for Conservation and Archaeology of Montenegro, Kotor, Montenegro (Presenting author)

**Keywords:** Cultural Heritage Protection, Montenegro, Preventive Archaeology

**Presentation Preference:** Oral

Montenegro, an independent state since 2006, and one of the smallest countries in Europe with 625,000 inhabitants, was able to develop archaeology as a discipline and its own heritage protection service rather late, after the WW2, in the context of former socialist Yugoslavia, when it also developed the necessary institutional infrastructure (museums, heritage protection institutes, but not university studies in archaeology or their heritage related disciplines).
It is not easy to say, where exactly Montenegrin archaeology is today. The old (‘Yugoslav’) concept in heritage protection remained in use until 2011 when Montenegro attempted for the first time to establish its own system and reform the institutional structure towards a more institutionally centralized and ‘nationalized’ organization. Unfortunately, this had a rather negative impact on the development of archaeology, especially its service in the field of preventive strategies, which were never properly reflected and attempted in archaeological circles since they were established ‘from above’. It is still common practice, that most of the large projects in spatial development (e. g. highway constructions) almost completely exclude preventive archaeology, while the situation regarding the booming tourist and construction industry in the coastal areas is even more difficult than it used to be 25 years ago.

Keywords: Montenegro, archaeology, protection

TH2-07 Abstract 09
Bosnia and Herzegovina: preventive archaeology still recovering
Author - Hadižhasanović, Jesenko, Faculty of Philosophy of University of Sarajevo, Sarajevo, Bosnia-Herzegovina (Presenting author)
Co-author(s) - Kaljanac, Adnan, Faculty of Philosophy of University of Sarajevo, Sarajevo, Bosnia-Herzegovina
Keywords: Bosnia and Herzegovina, research, preventive archaeology, heritage protection
Presentation Preference - Oral

Organization of archaeological heritage services, museums and education in Bosnia and Herzegovina, after the end of Yugoslavia, and especially after the establishment of the post-Dayton peace agreement (1998) radically changed the situation up to 25 years ago. Four major determinants can be seen today, all closely connected with the general state of the country itself are: Highly fragmented territorial and administrative organization: One organization on state level, two on lower, entity, level, as well as one on level of Brcko district. Entity of Federation of BH is further divided in 10 cantons, of which 5 have cantonal institutions responsible for protection of heritage, while the other 5 have these responsibilities entrusted to the cantonal ministries. Because of disharmonized laws on state, entity and cantonal levels, there are possibilities for overlap of jurisdictions during protection of certain monuments, and potential for mismanagement. Entity of Republika Srpska is divided on municipalities, and has a centralized institution responsible for heritage protection.

General economic situation: BH is among the lowest ranked countries in Europe regarding the GDP, preventing any substantial investment, employment in services in public sector (heritage services included). Most of museum institutions on local level have barely sufficient financing for basic operation. Inadequate (outdated) infrastructure: lack of trained people, equipment, uninterrupted institutional development.

Political situation: Because of the political deadlock over financing of 7 cultural institutions on state level, National Museum of Bosnia and Herzegovina was closed for almost 3 years, and other institutions that previously enjoyed state sponsorship in former state of Yugoslavia, have lost most of funds necessary to function properly.

TH2-07 Abstract 10
Practice of Archaeological Heritage Management in the Motorway Constructing Programme in Poland
Author - Prof. Dr hab. RosPECT, Seweryn, Instytut Archeologii Uniwersytetu Łódzkiego, Łódź, Poland (Presenting author)
Keywords: Poland, rescue archaeology
Presentation Preference - Oral

One of the effects of political transformations in Poland of the last 25 years was a necessity of confrontation with huge infrastructural problems. One of them was, and still is, a poor state of motorways development. An aim of the speech is an analysis of this problem in reference to last ten years.

The above time limit is not a matter of chance. Till 2005 a system of selection of archaeological excavations on the motorway lines contractors was based on non-economic criteria – connected with scientific experience of contractors. Universities and archaeological museums were preferred.

From a scientific point of view this system was effective and enabled realisation of research at a high level. Unfortunately, it also brought temptations. In 2006 a Polish nationwide archaeology corruption scandal broke out, in which both archaeologists and people responsible for granting concessions for research were accused. It was a real turning point in the history of Polish rescue archaeology. Over the next years a radical “marketization” of contractor selection took place. This launched mechanisms of competition, in which science was, as a matter of fact, the only criterion of evaluation.

The mentioned change admittely ensured transparency of the procedures but it however turned out to be killing for archaeology. In this new situation archaeological research became an object of a market game. Sometimes, a victim of this game is social interest, and research are conducted at the lowest acceptable level.

Keywords: Poland, archaeology, rescue archaeology

TH2-07 Abstract 11
Motorways and archaeology. What does it mean to be a contractual archaeologist in Romania?
Author - Dr. Simion, Mihaela, Romanian National History Museum, Bucharest, Romania (Presenting author)
Co-author(s) - Vasilescu, Floarea, Vanderley Arhela, Hunedoara, Romania
Keywords: Heritage Legislation, Preventive Archaeology, Romania Motorways
Presentation Preference - Oral

This paper aims to provide an overview of the current situation in Romania regarding infrastructure projects in front of constraints and obligations relating to heritage protection. In this moment,archaeological permits are also a source of frequent complaint among contractors in the road sector. The “in-principle agreement” granted by the Ministry of Culture consists of a simple statement that the issuer is not opposing the project, subject to all relevant archaeological research procedures being undertaken as per the legal provisions in force.

The challenges with preventive archaeological projects stem from these sources: lack of clarity in the legislation itself; capacity constraints among project promoters; and institutional incentives related to the financing of such works.

These premises and a number of other factors, have made that, in the last years, in Romania, Preventive Archaeological Research to be seen as an obstacle to the implementation of infrastructure projects and not as an extraordinary opportunity to research and capitalization of the heritage, as it would have been normal.

At the same time, these premises generated a series possible abuses or unprofessional approach from all the actors involved, with important consequences on the perception of the concept of archaeological heritage, some examples being the object of the present paper.

Keywords: Heritage, Romania, Motorways

TH2-07 Abstract 12
Towards a new Horizon: development-led large scale excavation policy in Hungary post 1990’s
Author - Csíkra, Szabolcs, Hungarian National Museum, Budapest, Hungary (Presenting author)
Co-author(s) - Czifra, Szabolcs, Hungarian National Museum, Budapest, Hungary
Keywords: large-scale excavations, management, methodology
Presentation Preference - Oral

In our presentation we will give a brief review of the changing national concept of large-scale excavations in Hungary during the last 25 years. Heritage services in Hungary have traditionally organized on a partly decentralized structure, in which the 19 county museums and the Budapest Museum acted independently within their territories. Other institutes, e.g., Hungarian National Museum, universities with archaeological department and the Archaeological Institute of the Hungarian Academy of Sciences, carried out centrally funded research projects excavations.

The upswing of motorway construction and private industrial developers challenged this system and forced Hungarian archaeology to apply new approaches, develop or adopt new methodologies and management for preventive excavations. Although a uniform protocol for archaeological process was crystallized by the mid 2000s, the other relevant elements of largescale excavations’ management are still widely debated. We would like to concentrate on developments of the last half decade, during which period radical changes in legislation, in financial and in the institutional background have been taken by the Hungarian government. We attempt to summarize the experience of the consequences of these turbulent central acts and outline the present status and practice of preventive archaeology in Hungary.

Keywords: Hungary, Heritage Legislation, Archaeology, Motorways

TH2-07 Abstract 13
Management of rescue archaeological research performance in Slovakia
Author - Dr. Homolák, Milan, VIA MAGNA s.r.o., Vrútky, Slovakia (Presenting author)
Keywords: management, preventive archaeology, Slovakia
Presentation Preference - Oral

Archaeological research has transformed during the last 25 years into a complex of legal regulations defining the course of field research. The current reality is that the biggest share of the field activity is not aimed at targeted scientific research, but at rescue archaeological researches. As a consequence, field archaeologists are becoming producers of findings and, in general, they have no time left to be what they studied to be - i.e. scientists. In case of positive archaeological research the subject of professional and non-professional discussions is the quality of performed research, treatment and processing of findings. It can be also assumed that rescue and advance archaeological researches will be on the wane in relation to transformation of building conditions.

Keywords: rescue archaeology, Slovakia
From a chance find to an archaeological protected site

The settlement of Krahes:

The village of Krahes is situated in the district of Tepeleana (Albania). Two graves were discovered occasionally during agricultural works by a farmer who informed the local authorities (Regional Division of National Culture, Gjirokaste). The archaeological excavation results. The preliminary study of the archaeological material and method of construction, dates both graves around cent. 3 – 2 B.C. During the excavation process the team (ASA and RDNC Gjirokast) conducted a survey around 272 273 for 9 archaeological chance finds. Prior to the foundation of ASA, these tasks were undertaken by the Archaeological Institute of Tirana and in cooperation with the Albanian Rescue Archaeology Unit (a non-governmental organisation) and by the Rescue Archaeology Section (abolished with the establishment of ASA) affiliated with the Institute of Cultural Monuments. Since 2008, ASA have followed the procedure for 9 archaeological chance finds.

The village of Krahes is situated in the district of Tepeleana (Albania). Two graves were discovered occasionally during agricultural works by a farmer who informed the local authorities (Regional Division of National Culture, Gjirokaste). The archaeological excavation results. The preliminary study of the archaeological material and method of construction, dates both graves around cent. 3 – 2 B.C. During the excavation process the team (ASA and RDNC Gjirokast) conducted a survey around the area measuring approximately 3.5 hectares. A high intensity of finds (tiles, bricks, pottery sherds and some rubble walls) was encountered on surface. Taking into serious consideration this potential, the NCA agreed to give to this area the special status of Archaeological Protected Area (APA).

Since 1990 major social, economic, conceptual, and technological changes greatly affected heritage sector in former ‘Eastern Europe’, and heritage labour market in particular. In this sector, previously fully dominated by public institutions, gradually emerged forms of private enterprises. SMEs and similar, which increasingly provided services needed for protection and management of heritage. Here, among heritage related discipline, it was archaeology which took the leading role in developing new forms of entrepreneurial practices. The major boost for this process and transformation of the roles came from intensive development which generated large quantities of development driven archaeological research in the framework of heritage protection and management Non-invasive archaeology, in two recent decades, greatly benefited from the development of ICT and other digital technologies. These technologies (combined with new concepts of preventive archaeology) had major impact on economy in archaeological heritage sector, providing a set of new and highly efficient tools for facing the scientific and business challenges. Moreover, not only that ICT and other digital technologies provided cost-efficient tools, they also boosted development of new kinds of archaeological research and manipulation with large data sets.

Four partners from Slovakia, Czech republic, Slovenia and Serbia (2 SMEs: VIA MAGNA s.r.o. Tˇarˇany, and 2 Departments of Archaeology from the universities of Ljubljana and Belgrade) joined in the project CONPRA (Industry-Academia Partnerships and Pathways; FP7-PEOPLE-2012-IAPP) with the principal aim of developing and disseminating recent concepts, methods and technologies adapted to the conditions of development driven archaeological research (3D scanning and computer modelling of architecture, sites and objects, aerial reconnaissance, manipulation with large data sets and virtualization of heritage). Until very recently, all these techniques were greatly lacking in every days practice of preventive archaeology, or there were limited to the academic research. Poster will present the results and case studies of the CONPRA project.
TH2-09 MANAGEMENT OF ARCHAEOLOGICAL SITES IN TURKEY: PROSPECTS AND FUTURE

Friday, 2 September 2016, 14:00-16:00
Faculty of History, Room 217
Author - Boukkass Khan, Dozler, METU/ODTU Yerleseim Arkeolojisi Anabilim Dalı, University College London, London, United Kingdom (Presenting author)
Co-author(s) - Prof. Ergüçay, Deniz Burcu, METU/ODTU Yerleseim Arkeolojisi Anabilim Dalı, Ankara, Turkey
Presentation Preference - Regular session

Which sites to manage and why managing them? • How to manage an archaeological site and what to manage? • Community involvement and public archaeology in Turkey • Participatory management • Impact assessment of archaeological projects • Rural development • Local/regional development.

In this session it is proposed to ask participants to consider the shortcomings in the management of archaeological sites by archaeologists involved in Turkish archaeology: we hope to argue for a greater need for structured organisation and involvement in the management process. The session envisage to place a special focus on archaeologists and sites directors involved in field archaeology in Turkey: their involvement not only as stake holder on the management of archaeological site during the field seasons but also pre- and post-excavations and survey. The aim of this session would be to create awareness for the needs for site management for archaeologists in association with local authorities. It is also hoped that cross-fertilisation between archaeologists and heritage managers would lead to fruitful exchanges on the variety of processes and methods for managing archaeological sites. The session organisers hope to attract participation to the session from Turkish and international archaeologists and practitioners concretely involved in archaeological field work in Turkey. The ambition is to select the best papers to be published in a specially edited volume of CMAS Journal (Conservation and Management of Archaeological Sites).

The call for paper proposal for the session shall target work conducted at key sites such as Sagalassos, Aspendos, Nemrut Dağ and Pergamon, but shall not be limited to it. Junior and up-coming archaeologists as well as more established scholars shall be given the opportunity to confront their ideas and experiences, from a national and international perspective.

TH2-09 Abstract 02
Elaiussa Sebaste: safeguarding & valorization of a south-eastern Anatolia archaeological site
Author - Prof. EQUINI, Eugenia, Sapienza Università di Roma, Roma, Italy (Presenting author)
Keywords: Elaiussa Sebaste, safeguarding, valorisation
Presentation Preference - Oral

During the archaeological research that has been carried out on a continued basis since 1995 at Elaiussa Sebaste in the South Eastern coastal part of Turkey, extensive restoration activities were realised on all of the structures brought to light to assure the conservation and safeguarding of the site’s archaeological heritage. These interventions have achieved in arresting the deterioration of the site and the impounding real estate speculation while allowing to open three monumental complexes to the public (theater, agora and proto-byzantine palace) with the setting out of visitor’s paths with view points offering more complete visibility, with panels located at the entrance of the archaeological area and inside, displaying plans, reconstructions and drawings that help understand the stratification of the complexes and the visible structures.

However safeguarding and valorization are necessarily linked to the creation of an Archaeological Park with different itineraries, to be realised in collaboration with the Local and Regional Administrations that will allow to enhance in a sustainable way the extraordinary cultural heritage of this area of Turkey. This project must impose the indispensable town planning boards in order to protect the precious archaeological and physical landscape of Elaiussa from new building constructions in sensitive areas and from illegal dumping.

At present 4 different itineraries have been designed – on the basis also of interviews to visitors of various nationalities - of which the 1st concerns the necropolis, one of the most spectacular burial complexes in Turkey due to the good state of preservation, the monumentality and the richness of the funerary buildings.

The valorisation project of the Necropolis road between Elaiussa and the near ancient city of Korykos (modern Kızkalesi) was started during the 2015 campaign with bush clearing and careful cleaning carried out by the Mersin and Erdemli Belediyeler. The results that have been obtained so far are very promising for the pursuing of the program to extend the visitor’s itineraries and conservation works.

The 2nd itinerary is to be in the Public Quarter; the 3rd will concern the structures investigated on the promontory which is the most difficult to implement due to the morphology and extension of the terrain, the 4th will be related to the Temple area on the hill separating the site of Elaiussa Sebaste.

The complete implementation of this program with the realization of the infrastructure necessary for the valorisation of this archaeological area will favour the development of sustainable tourism that will become an important part of the community’s cultural heritage and economic growth.

TH2-09 Abstract 03
Protecting and communicating Arslantepe: work in progress to save and narrate an early state centre
Author - Dr. Ballosi Restelli, Francesco, Sapienza Università di Roma, Rome, Italy (Presenting author)
Co-author(s) - Fragsigne, Marcela, Sapienza Università di Roma, Rome, Italy
Co-author(s) - Tuna, Ayşihan, İnönü Üniversitesi, Malatya, Turkey
Keywords: conservation, site management, Turkey
Presentation Preference - Oral

The archaeological mound of Arslantepe, in the outskirts of the city of Malatya, has been included in the UNESCO tentative list of world heritage sites in April 2014. The site is under regular archaeological excavation since 1961 and has yielded unprecedented data and finds concerning various periods of its history, but mostly that of primary state formation (end of the IV millennium BCE).

An early palatial structure still standing and in excellent state of preservation is the main testament left by this site and is today unique in its kind worldwide. For this reason an open air museum has been designed by the Italian Archaeological Expedition and inaugurated in 2011. Since then the site is officially open to the public and local awareness has increased significantly; in 2015 a
project for sustainable touristic development centred on the site has been carried out with the sponsorship of Gelecek turizm. Direct involvement and attention of local and regional authorities too has intensified, somewhat transforming and bringing new inputs to the activities of the scientific team working there; from these virtuous relations the need of a multidisciplinary team for the construction of a site management plan became obvious, and work has started with a multiple perspective: from community and local needs to regional development, national heritage management and international awareness.

TH2-09 Abstract 04
Multiple layers and multiple players: management layers and archaeological conservation in Turkey
Author: Öz, B. Nilgün, Istanbul, Turkey (Presenting author)
Keywords: archaeological conservation, collaboration and inter-disciplinarity, management
Presentation Preference - Oral
Conservation management at urban and rural archaeological sites in Turkey is usually spearheaded by accredited architects and planners. As in other countries, archaeologists have often tended to work in isolation, away from the responsibilities of the longer-term management and conservation of their sites. It is becoming more common, however, for archaeologists, architects and other conservation professionals to work more collaboratively in the name of site management/conservation. But what are the driving forces behind these initiatives? Is it the interests of a specific director or a team member? Or is it triggered by the local authority or a funding body? Or perhaps a new national discourse? The Ministry of Culture and Tourism’s recent requirements that all archaeological excavations increase their conservation measures, and their quest to have more sites inscribed on to the World Heritage List, have certainly had influence.

Another issue is the significant differences in the way conservation is viewed and practiced in sites across Turkey. While some concentrate on building conservation and site presentation, others may go beyond and look for ways to engage local communities in conservation processes. This paper will discuss the changing approaches and practices in the conservation and management of archaeological sites in Turkey by focusing on inter-disciplinarity, collaboration and participation in archaeological conservation through past and current foreign-financed projects at several sites across the country including Aphrodisias, Golyazi, Tophane, and Kaman-Kalehöyük among others.

TH2-10 Abstract 01
Management of large archaeological projects in a competitive environment: the French case
Author: Dr. Depaepe, Pascal, INRAP, Amiens, France (Presenting author)
Co-author(s): Kerouanton, Isabelle, INRAP, Poitiers, France
Co-author(s): Pliauix, Gilles, INRAP, Amiens, France
Co-author(s): Talon, Marc, INRAP, Amiens, France
Keywords: Major Development Projects, Preventive Archaeology, Public/Commercial Archaeology
Presentation Preference - Oral
In 2001, following the ratification of the Malta Convention (1995), France adopted a legislative system, entrusting the realization of archaeological evaluations and excavations to public service bodies. However, following a political change in 2003, excavations were opened up to private companies and even though after several years of implementation the system now seems fully established, it is still challenging. One of the specificities of developer funded archaeology in France is its involvement in major development projects: motorways, railways, canals, industrial estates, etc., which raises questions on how archaeologists handle these major archaeological projects in a competitive environment, the organization put in place, how results are disseminated to the scientific community and what type of cultural enhancement is presented to the general public?

These issues will be addressed via two large archaeological projects: the high-speed rail line between Tours and Bordeaux and the Canal Seine-Nord Europe. Methodological proposals will also be presented.
Excavating England: Development and developments in archaeological fieldwork since 1990

Author: Victoria Donnelly, University of Oxford, Oxford, United Kingdom (Presenting author)

Keywords: big data, development-led archaeology, modern fieldwork practice

Presentation Preference: Oral

Excavating England: Development and developments in archaeological fieldwork since 1990 Archaeological fieldwork in England has changed significantly since the introduction of Planning Policy Guidance (PPG) 16: Archaeology and Planning which introduced the principles of the Valetta Convention into the English planning system. There has been an explosion of data generated from development-led archaeology which initially overwhelmed the traditional systems of analysing and disseminating the results of archaeological investigations and which required an evolution in the systems and methods relating to archaeological research design and fieldwork investigation. But are these new modern systems really as different as we think they are? How does the nature of development-led archaeology impact the results of archaeological fieldwork investigations? results that form the basis of our interpretation and understanding of the archaeological record?

The European Research Council funded English Landscapes and Identities Project based at the University of Oxford is a ‘big data’ project that combines local, regional and national datasets to illuminate continuity and change in settlement and use of the English landscape over a 2500 year time span, from the Middle Bronze Age to the Modern Day Survey. The project database currently holds over 900,000 records relating to archaeological fieldwork in England; the vast majority of these records have been generated since 1990. It quickly became apparent that the English Landscapes project was not just documenting the behaviours of people in the distant past but also the more immediate and recent past: the nature of our data is clearly structured by modern archaeological practice. Our data shows that there are currently over 2400 unique archaeological organisations in England that have been involved in the archaeological fieldwork since 1990. Although they range from commercial development-led companies, academic university departments to charity groups and voluntary organisations, the vast majority of these fieldwork investigations occur as part of the development and planning framework, within the context of a commercial system. The nature of proposed development, from aggregate extraction quarry sites, major road and rail infrastructure schemes and large scale housing development sites to smaller urban infiltration and localised development schemes, clearly shapes both the design of the associated archaeological investigation and the resultant data. Archaeological fieldwork can range from massive landscape scale studies to constrained ‘keyhole’ investigation schemes and can be undertaken by large national companies or small ‘sole trader’ individuals. Examining how English archaeology has changed since 1990 and the advent of PPG 16 provides interesting insights into modern day archaeological practice and the relationship between legislation and the quality and quantity of archaeological data that has been produced.

This paper will explore how modern development has created and influenced development-led archaeology in England and how this influence has an underlying structuring effect upon the resultant English archaeological record.
This paper assesses current issues related to the implementation of large-scale archaeological excavations, emphasizing in particular the importance of research non-rescue excavations in progressing archaeological research. In the European archaeological perspective, these issues are complex and the problem will therefore be discussed within the context of the Czech archaeological discourse concerning the earlier prehistory. Two types of large-scale excavations will be compared: 1. Non-rescue excavation of the Neolithic site at Bydgoszcz, which started in the late 1950s and lasted nearly fifty years; 2. Rescue excavations of the Kolín city road bypass which was carried out in 2008. Results of both types of excavations will be presented exemplifying changes in archaeological research management.

TH2-10 Abstract 07
Modern technologies in Polish Archaeology – A Case Study of Central Masovia 2009 – 2014
Author - MA Wiśniewski, Mariusz, Wojewódzki Urząd Ochrony Zabytków w Warszawie, Warszawa, Poland
Co-author(s) - Olesz-Stol, Agnieszka, Institute of Archaeology, University of Warsaw, Warsaw, Poland (Presenting author)
Keywords: LIDAR, Photogrammetry, technology

The aim of this paper is to enrich academic discussion about broadly understood "modern" or "new" technologies in Archaeology by assigning actual facts and statistical information to various claims and propositions circulating in Academia. Further, to inform exactly how many research of what kind took place in the 2009-2014 period and in each year of this period, which method is most popular, and if there are any general tendencies to be noticed in usage of particular methods. Authors use as a base for this case study a certain area of nine counties in central Masovia region (Poland), which is moderately enriched by objects of archaeological importance, yet where a consistently high number of private and public investments causes steady, high number of archaeological projects to be carried out in recent years. These are conducted on different scale from one day watching briefs up to road scheme projects covering large previously underdeveloped areas around the city of Warsaw, and are carried out both by local archaeological teams and units from other parts of the country. A common factor is almost exclusively commercial character of works, also an important background is created by the EU funds inspired boom in infrastructural investments, that will most likely be the largest event of such scale for many years to come. Data presented here is collected from all field reports and documentation collected on a basis of art. 31.3 of Polish Monument Care and Protection Act by Masovian Voivodship Heritage Officer Office for the period of 6 years (2009 - 2014). Article does not aim to discuss quality of such work or validity of chosen methods for the projects they have been used in – this is a matter for another study. Neither is the authors aim to qualify, which method is more suitable for future use in the field archaeology in this region. This report should be treated as factual base for future discussion and an attempt to present the condition of Polish Archaeology and its certain aspect.

TH2-10 Abstract 08
Rescue Archaeology in Romania. Past and perspectives
Author - Măgurean, Despina, Institute of Archaeology Vasile Parvan, Bucharest, Romania (Presenting author)
Co-author(s) - Dr. Magureanu, Andrei Mirela, Institute of Archaeology Vasile Parvan, Bucharest, Romania
Keywords: academic research, cultural management, rescue archaeology

1989 represented a turning point for Romania not only from political point of view, but from cultural management also. Romania, willing to be integrated into the European structures, adopted a brand new strategy regarding historical patrimony in concordance with European legislation and not only. From this point of view this was a dramatic change, suggesting that all is going into one direction fast. But one is theory and another is practice. Did the practice evolve into the same direction and with the same speed?

Preventive archaeology or rescue archaeology was part of archaeological practice before 1989, also. Today, both represent a more and more important way to produce historical knowledge. So, there are differences? What those differences are? Importance into cultural strategy of government? Technology applied in the field? Interpreting the data? Is it the reflection of the legislation or just to try to be just a pale reflection of it? Can this way of research be done in order to provide information for an academic archaeology?

To this kind of questions and to many others we intend to respond and to presents the state of link between the preventive/ rescue archaeology and the academic scientific research.

TH2-10 Abstract 09
Rescue Archaeology in Russia: the radical shift of the 1990s, and its consequences
Author - Dr. Engvovata, Aya, Institute of Archaeology of Russian Academy of Science, Moscow, Russia (Presenting author)
Keywords: change in legislation, rescue archaeology, Russia

Prevention Preference - Oral
In Russia, the beginning of the 1990s was a turning point in the history of the nation. Massive changes took place in the political, social and legal spheres over an area which made up one-fifth of the world’s landmass, with a population of over 170 million people (including the USSR, Bulgaria, Hungary, Poland, Czechoslovakia and other nations). The resulting shift to a market-based approach in the cultural sphere (including archaeology) was both significant and controversial. During the period of the economic and political crisis in the early and mid-1990s, the amount of archaeological research being conducted fell off rapidly, including rescue archaeology – primarily due to the situation which had gripped the entire country. In 2002 Federal Law 73-FZ came into force: "Concerning sites of cultural heritage (historical and cultural monuments) of the peoples of the Russian Federation". In 2011 Russia adopted the European Convention on the Preservation of Archaeological Heritage. In the 2000s, the situation changed rapidly, due to the fast pace of economic growth. These changes were clearly demonstrated by the pace of issue of permits for carrying out archaeological works. This inevitably raised questions about revising the methodology with which such rescue archaeology was conducted, and ways of optimising it. A system of regulation had evolved over many years, in which scientific regulation underpinned the methods employed when researching archaeological sites – identification on-site, and a method for presenting the scientific documentation which applied across the entire country. These norms apply to rescue archaeology too. There are no short cuts available in these methods. Attempts to bring in systems of "observation" as a subset of "rescue" archaeology methods can be considered successful only in the cases of research into later, mixed-up deposits. Alongside this, the system by which the state fund scientific research has also changed. The proportion of rescue archaeological work conducted in the 2000s rose to above 80%, whereas it had only accounted for 20% in the 1990s. The development of private, including small business account for the considerable rise in the proportion of research being conducted by non-state firms involved in rescue archaeology – from 1% in the early 1990s, to 40% in 2012. This pace of change is intrinsically connected with the way in which the tax system operates in Russia. For state organisations (departments of the Russian Academy of Sciences, museums, universities) the system of taxation remains in place, in which there are no tax breaks. However, in 2004 the Russian Federation brought in a tax deduction scheme for a wide range of different services – including archaeological services. The primary consideration under which such tenders were won or lost, was the price quoted for their completion. Non-state organisations were placed at a significant financial disadvantage under these tax arrangements. During the period of the Russian economic crisis of the 1990s (and eventually arising from ‘black holes’ in legislation) a significant Black Market developed for archaeological artefacts. In 2013 a new Federal Law came into force, No 245: "Concerning amendments to Particular Legislative Measures of the Russian Federation which prevent illegal activity in the field of archaeology".

TH2-10 Abstract 10
A protection system of archeological heritage in the Tver Region in Russian Federation
Author - Khokhlova, Alexandra, IA RAS, Tver, Russian Federation (Presenting author)
Keywords: A protection system of archeological heritage, Tver Region in Russian Federation

Presentation Preference - Oral
The Tver Region is situated on the Upper Volga between Moscow and Saint-Petersburg. Three big rivers start on the territory of the region – the Volga, the Western Dvina, and the Matla; the Dnieper has its source nearby. The region turned into a historical crossroad, where the waterways to the Baltic, the Black, and the Caspian Seas started. This region was popular among different population groups from the Late Paleolith up to the Modern times. More than 7000 archeological monuments were discovered in the Tver Region. The objects of the archeological heritage are protected by law; as archeological monuments are considered to be state property. The Law states that financing the preventive (rescue, protective) archeological excavations is the obligation of the construction project investor. The protection system of the objects of the cultural heritage in the Tver Region appeared in 1990s. A small branch of the Cultural department of the Regional Government represented the state interests in those years. Five or six archeologists who worked at the State Museum and the University. Small excavations and searching for the new archeological monuments were carried out in the context of the beginning of the 1990s in Russia led to the rise of economic activity, especially in construction. The new laws, which allowed commercial firms to conduct archeological works on equal basis with state organizations, were adopted. The first private archeological company – Tver Research and Restoration Archeological Center – was established in 1990. After the year 2000 a new Department on State Protection of the Cultural Heritage in the Tver Region was founded with the aim to control the processes of archeological monuments protection (archeologists, historians, architects, lawyers, and managers work in the department). The State Department controls the execution of the federal law, which states the policy of state protection of the cultural heritage in the Tver Region.
that the preventive archeological excavations are obligatory on the sites where construction works are planned. The investors are ready to fund archeological works. But how does the Law operate? It obviously operates through an archeologist. A rapid development of the construction business led to a great amount of preventive excavations. Tver State University solved a problem of the necessity of young archeologists training. About 10 state and commercial organizations dealing with the preservation of the archeological heritage work in the Tver Region nowadays. To summarize, there are two components of the archeological heritage protection system in Tver Region. Department on State Protection of the Cultural Heritage and archeological organizations. This system is effective. In the territory of the historical centre of Tver there were rescue excavations carried out on the territory of more than 400000 m². Archeological works were also carried out during the construction of the new roads, oil and gas pipelines.

However, there are still prospects for further development - a collaboration with society and civil society organizations on the protection of the cultural heritage is necessary. It is crucial to realize the value of the archeological heritage as well as the importance of improving the scientific relevance of the preventive archeological works.

TH2-10 Abstract 11
“Amateur” archaeology, legal or not?
The experience of a legislative practice in Russia

Author - Sapyrina, Irina, Institute of archeology RAS, Moscow, Russian Federation
Co-author(s) - Zeleznova, Olga, Institute of archeology RAS, Moscow, Russian Federation (Presenting author)

Keywords: heritage, law, Russia

Presentation Preference - Oral

Hoard hunting has been actively developed since 1990s in Russia and all over the world. It is connected with dramatic changes in social and economic life of the country and availability of metal locators. It took 20 years of a purposeful activity of the specialists in archeological heritage conservation for a society to realize the value of the losses of the pilage of archeological sites. In 2014 in Russia the federal act N315 was adopted, directed to the heritage rescue and consisted of the assets on criminal liability of “grave robbers” (up to 6 years). Apart from the asset of the encouragement of the persons doing the illegal excavations on the territory of archeological sites, this law contains norms and regulations new to the Russian legislative practice: about the territory of an object of an archaeological heritage, about the state historical and cultural expert evaluation, about the mainstreamification of the objects of an archeological heritage, about the state national objects’ register and the encourage the liability of archeologists. The report is about the analysis of the practice in the application of the federal act 315 for the last two years from the moment of its adoption.

TH2-10 Abstract 12
Moscow Monasteries: new stage of the archeological investigations (2003–2015)

Author - Beliaev, Leonid, Institute of Archaeology of RAS, Moscow, Russian Federation (Presenting author)
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Keywords: Late Middle Ages, Early Modern times, Moscow monasteries, new investigations

Presentation Preference - Oral

Archaeological investigations of the Zachatievsky Alekseevsky monastery (Datschenka) that were started in 2003 laid the foundation of the new stage in the monasteries investigations which at the present time is recognized as one of the most important stages in the archeology of the Late Middle Ages and Early Modern times in Russia. Until the last third of the 20th century archeological heritage work in the Tver Region nowadays. To summarize, there are two components of the archeological heritage protection system in Tver Region. Department on State Protection of the Cultural Heritage and archeological organizations. This system is effective. In the territory of the historical centre of Tver there were rescue excavations carried out on the territory of more than 400000 m². Archeological works were also carried out during the construction of the new roads, oil and gas pipelines.

However, there are still prospects for further development - a collaboration with society and civil society organizations on the protection of the cultural heritage is necessary. It is crucial to realize the value of the archeological heritage as well as the importance of improving the scientific relevance of the preventive archeological works.

TH2-11 Abstract 01
Growing Living Landscapes

Author - Dr. MacGregor, Gavin, Northlight Heritage, Glasgow, United Kingdom (Presenting author)
Co-author(s) - Dr. Stagno, Areia Maria, University of Basque Country, Spain

Keywords: Archaeology, Future, Landscape

Presentation Preference - Oral

As an introduction to the session, From Archaeological Past to Living Landscapes, I will provide some context as to why archaeologists should be concerned with contributing to the growth of living landscapes. As such, the paper will consider the ramifications to archaeological practitioners of the increasing need for articulation of the management of archaeological and historic environment assets with other tools and instruments which seek to deliver more sustainable landscape management. Ultimately, it will outline some perspectives and areas of practice which could be developed further as opportunities for future innovation in growing archaeology and historic environment as part of living landscapes.

TH2-11 Abstract 02
Cultural landscapes in the Cantabrian Mountains: rethinking the future of rural Europe

Author - Dr. González Álvarez, David, Universidad Complutense de Madrid, Salas, Spain (Presenting author)

Keywords: Cultural Landscapes, Heritage, peasant communities

Presentation Preference - Oral

In the region of Asturias (North of Spain), local government chose thirty years ago a terrific successful slogan for promoting rural tourism: “Asturias, Natural Paradise” (from Spanish “Asturias, Paraíso Natural”). The logo of this famous campaign shows an idyllic rural drawing with green meadows which are sight through the arches of the early medieval church of Santa Maria del Naranco.

FROM ARCHAEOLOGICAL PASTS TO LIVING LANDSCAPES

Friday, 2 September 2016, 09:00-16:00
Faculty of History, Room 211

Author - MacGregor, Gavin, Northlight Heritage, Glasgow, United Kingdom (Presenting author)

Co-author(s) - Lagh, Paul, CAVLP Heritage, New Lanark, United Kingdom

Presentation Preference - Regular session

The management of archaeological and historic environment assets increasingly articulates with other tools which seek to deliver more sustainable rural landscape management. A range of landscape scale planning and management tools are currently being applied in Europe including Biosphere Reserves, Ecocentres, Landscape Observatories, Landscape Partnership Schemes, Landscape Plans, Landscape Programmes and World Heritage Sites. We wish to critically explore how archaeology, historic environment and cultural heritage currently sit within such tools:

• How are archaeological, historic environment and cultural heritage assets weighted and prioritised (e.g. in contrast to ecological or social values)?
• What opportunities does archaeology and historic environment offer for sustainable economic development in rural landscapes?
• How can archaeological (and historical ecological) research help to historically characterize environmental resources management practices, based on local actors and local knowledge, to offer new tools for management of rural areas?
• What are the benefits and challenges of living traditions and heritage produce in sustaining resilient cultural landscapes?
• What opportunities do archaeological assets provide for building broader sustainability and legacy?
• Are there examples of past land tenure and stewardship from which lessons (both negative and positive) can be learnt in future management of landscapes?
• How successfully have communities been engaged and involved in the development and delivery of such tools?
• How successful have such landscape planning and management tools been at creating legacies and sustainable approaches to more integrated landscape management?

We welcome papers which address some of the questions above, either through case studies on experiences, broader critical reflection on landscapes management policy and tools, or by exploring opportunities for future innovation.
TH2-11 Abstract 01

Managing the archaeological heritage

Keywords: Cultural landscapes, Engaging stakeholders, Sustainable management

Presentation Preference - Oral

Understanding and integrating stakeholders as the active creators and beneficiaries of cultural landscapes is an essential but under-developed element of sustainable heritage research.

Through work focusing on some of the most significant monuments in European history (Late Iron Age oppida: c.200BC-AD60), this paper will explore how communities (including farmers, smallmedium enterprises (SMEs), wildlife organisations and residents) understand, experience and shape cultural landscapes. The work will focus on the cultural landscapes of medieval Girona and Salmondsbury in the UK, which represent 2 of the 4 case study sites involved in the “Resituting Europe’s first towns” (REFIT) project funded by the Joint Heritage European Programme (JHEP), Joint Heritage Initiative (JHI). The project represents cooperation between Durham University (UK), Biblische EPCC (France) and Universidade Complutense de Madrid (Spain), alongside associate partners from outside archaeology (including wildlife management, farming, national parks and local government) from the three partner countries.

This project recognises that archaeological heritage is only one of many aspects of value — ecological, social, cultural and economic — within cultural landscapes and therefore needs to be part of an inclusive approach to developing landscape resilience. In order to develop better management strategies, the first stage of the project has been the analysis of current stakeholder perceptions of these cultural landscapes. This has been assessed through surveys, interviews and focus groups as well as initial engagement events. This paper examines how these cultural landscapes are used and understood. Using this analysis we explore how current knowledge can be increased whilst integrating existing landscape values into the management of cultural landscapes. As the project progresses, we look forward to seeing how such approaches can be used to develop engagement practices which will enhance cultural landscapes for greater mutual benefit to both landscapes and people.
Across Europe rural areas are suffering, in term of loss of biodiversity, cultural landscapes and traditions, as the consequence of depopulation and increasing abandonment of their management. This problem is particularly evident in mountain areas, where the presence of common-lands and common access rights was crucial in shaping settlement patterns and rural landscapes, nowadays often protected as natural heritage.

This paper will consider, through presentation of the first results of a project focused on the archaeology of common-lands in Southern Europe, how archaeology could contribute to the creation of more synergies between research and management of mountain and rural areas.

The study is centered on the connection between social structures and related material evidences of local practices. The investigation pays specific attention to the practices of management and production of agro-forestry-pastoral resources. This approach has clearly shown, on one side, the historical dynamism of rural areas (and in particular of common-lands) for transformation of uses, organization and access rights and, on the other, the contribution of local knowledge to the construction and preservation of historical rural landscapes.

The paper will reflect on how archaeology and historical ecology could help to connect historical reconstruction and present management of landscapes. This link could offer new approaches to better define landscape management policies, based on local actors and local management of environmental resources, in the framework of actions for the conservation of rural areas as a part of European Cultural Heritage.

TH2-11 Abstract 07
Cultural landscapes and territorial management: the case study of Madrid
Author - Dr. Ruiz Del Arbol Moro, Maria, Institute of History, CSIC, Madrid, Spain
Co-author(s) - Baste Prats, Ines, Institute of History, CSIC, Madrid, Spain (Presenting author)
Co-author(s) - García Hernandez, María, Universidad Complutense, Madrid, Spain
Co-author(s) - De La Calle Vaquero, Manuel, Universidad Complutense, Madrid, Spain
Keywords: Cultural Landscapes, Madrid, Tourism
Presentation Preference - Oral

The Community of Madrid (this is the name of the administrative region of Madrid) is one of the main tourist regions in Spain, with a high number of cultural heritage resources. Madrid is a city that maintains the traces of the rural past and the characteristics of cultural heritage, both of a rural and urban character, is protected by several laws and articulated into several typologies. As in other parts of Europe, this heritage constitutes an important factor for the quality of life of local people; and, at the same time, needs to be turned into an asset for regional development. Our proposal presents an in-depth research work that has been done within the project “The heritage ensembles as touristic activies of the Community of Madrid. Problems and opportunities in a territorial perspective”. We want to contribute to the TH2-11 session with an approach to the case study of the archaeological landscapes of the region of Madrid. Nowadays different areas are considered by the regional Historical Heritage Law under the denomination of “cultural landscape” or other classifications of territorial character (such as “historical place” or “archaeological area”). As such, these have been identified and protected as exceptional examples of the human environment and relationships during time. The protection of such “areas” or “landscapes” means a qualitative change in the conception of the character of the heritage and facilitates connections and links with the global process of territorial management (through links with environmental laws, or normative of environmental impact...). This is both a challenge for the public administrations and an opportunity to increase the benefits (social, economical, environmental) of archaeological heritage. Our proposal aims to explore these issues, and to analyze the opportunities that the archaeological past offers for sustainable economic development in rural areas. Our approach will focus in the tourism use of these heritage areas and its role in the context of the environmental and social politics of the region. On the background we aim to make a critical reflection on landscapes management policy and its convergence with promotion and valorization strategies.

TH2-11 Abstract 08
Through Rural Living Landscapes to Ethnoarchaeological Reflections of Salt in Eastern Romania
Author - PhD Student Agustulescu, Mihaela, “Alexandru Ioan Cuza” University of Iasi, Iasi, Romania (Presenting author)
Keywords: rural immaterial heritage, salt-scapes, traditional practices
Presentation Preference - Oral

Salt, due to its diverse properties, is found in all the dimensions of the human communities. This is proved over time by numerous archaeological findings, Greco and Latin inscriptions and documents, as well as by current human behaviour determined by the abovementioned natural resource.

The Eastern Romania, a region rich in salt, has a privileged position in European landscape and even worldwide, due to the high quality of all the saline occurrences. The most common are the salt springs, of a great value, first of all because they were known, appreciated and exploited since Neolithic times. These springs came to be used progressively in various aspects, from their role of condiment to the symbolic dimension of the product obtained by crystallisation of the liquid salt. A special situation is highlighted by the continuity of the traditional practices of exploitation of brine from salt springs in the rural world of Eastern Romania, still at a high level of intensity.

However, because the area determined by the presence of salt and this community are threatened by a rapid globalisation and by a forced civilising, it is necessary to draw attention over the risk of the irreversible loss of many of these practices that make a unique intangible heritage.

This paper aims to highlight the human behaviour that is defined by the collective mindset of Eastern Romania rural societies, through a diachronic approach, under several aspects, for identifying some ethnoarchaeological paths for an archaeological interpretation.

TH2-11 Abstract 09
Ethnoarchaeological heritage and cultural landscapes: a case-study from the Western Alps
Author - Dr. Carrer, Francesco, Newcastle University, Newcastle upon Tyne, United Kingdom (Presenting author)
Keywords: Ethnoarchaeology, Mountain landscapes, Tourism
Presentation Preference - Oral

Landscape management is a key-aspect of European policy. Cultural landscapes are described in the European Landscape Convention as bearers of important identity values, and their protection is expected to have a crucial impact on environmental sustainability (preservation of biodiversity and traditional products, prevention of soil erosion and geomorphological instability, etc.) and the safeguard of local communities.

Ethnoarchaeology is placed at the core of this cultural and political framework. Ethnoarchaeological inferences provide crucial insights to understanding archaeological landscapes and their evolution, but they can also contribute to the protection, management and planning of traditional landscapes in Europe and abroad. Despite these potentials, the impact of ethnoarchaeology is still quite limited outside archaeology and outside academia.

This paper wants to address all these theoretical and methodological issues, using a case-study from the Western Alps: Valli di Sella Brignola, an upland valley (>1600 m asl) in the Cuneo province (Italy). The local landscape presents part of the research work done within the project “The historical landscapes of Sella Brignola suggest that this pastoral landscape date back at least to the 16th century. Interviews with the local herder provided information on its function and use. The historical and ethnographic importance of the gias of Sella Brignola, and the interest shown by policy-makers, members of local communities and tourists for this research, suggested that the results of the project could be used for protecting and managing this site and the pastoral landscapes within which it is embedded. This paper focuses mainly on the initiatives that have been undertaken to preserve these pastoral huts and to make them a point-of-interest in the touristic hiking tracks.

TH2-11 Abstract 10
From the loss of a city, to the discovery of Archaeological Heritage: the modern story of Palestina
Author - Pintucci, Alessandro, University of Rome “LA Sapienza”, Roma, Italy (Presenting author)
Keywords: Heritage, Italy, Protection
Presentation Preference - Oral

Modern archaeological history of Palestina, city of ancient origin near Rome, started in the mid 1970s, when the first discoveries of tombs and archaeological materials were carried out in the territory; after a successful brackets linked to the promulgation in 1820 of one of the first laws of Italian protection, the Pacca’s Edict, in the second half of the 300 the city became a popular destination of Italian and foreign antique dealers, in particular French and Germans, who devoted to systematic excavations, almost never scientific, to recover the precious fabric of the Colombella necropolis. This pirate-logic excavations and recovery of materials went on until the middle of 500, when, after World War II, the city, like the whole of Lazio Region, was the scene of an uncontrolled speculations that put a strain on so-called Cotone city and in the countryside: in the 1960s Palestina became famous in the newspapers as an example of poor land protection, culminating in the 1970s, with the opening of a painful legal case, which led to important arrests of staff of the Ministry of Culture too, turning the spotlight on the low, even zero, control that had threatened to destroy the heritage of the city and its territory. Since then a weak management of the municipality, with a plan that has managed to create buffer zones in areas considered at archaeological risk, has allowed a more fine-grained control of the territory and the execution of archaeological excavations in areas hitherto little studied or known. Being the city that threatened to destroy its goods in the 1960s, with the last elections in 2013 the Municipality...
The siege of 's-Hertogenbosch in 1629 has been an important moment in the war between Catholic Spain and the Dutch. Historic reports, documents, and paintings provide a rich source of information about the siege. The town was besieged for 5 months, and the resulting destruction and devastation had a lasting impact.

In 's-Hertogenbosch the foundation ‘De Groene Vesting’ (‘The Green Stronghold’) was established. It’s a local initiative of inhabitants of ‘s-Hertogenbosch and surrounding villages to visualize and experience the lines of Frederic Henry of 1629 around the town. The aim of the foundation is to facilitate access and understanding of the site for the general public, to provide a biodiverse landscape among the general environment, and to make the site more attractive to tourists.

The excavations resulted in an intense cooperation between the municipality, the foundation, and the archaeologists. The excavations aimed to provide a deeper understanding of the lines of Frederic Henry of 1629 and to facilitate access and understanding of the site for the general public. The excavations were integrated into a larger project, the Wroxeter Hinterland Project of the mid-1990s, which aimed to create new opportunities for building broader sustainability and legacy. In view of the future management of Appia Antica as an archaeological park, the aim of this paper is to contribute to the study, engagement, understanding, management, protection, and enhancement of archaeology in the UK.
Such an approach reflects the increasing desire to see archaeology as part of the wider historic environment, and reflects something of the reality of a site that was a Roman city for 500 years, but has been farm land for millennia, before and after the Romanes.

TH2-11 Abstract 15
Transformation and management of Historical Agrosystems in the Iberian Landscapes (THALES)

Author - Dr. Sarabia, Julia, University of Alicante, Alicante, Spain (Presenting author)
Presentation Preference - Poster

The interest in the study of cultural landscapes has grown considerably in recent years. Several strategies have been developed in this field in Europe, marking it as a priority area of interest in Community policies as landscapes combine elements that affect both the cultural, environmental, economic identity and political heritage. In this context, we present the first results of THALES project (University of Alicante, Spain). The main challenge of the project is the combination of different methods to study the Iberian cultural landscapes for more advanced purposes: to contribute to a deeper understanding of the territory, in order to achieve development that respects the legacy of the past and its conservation. It is used a multidisciplinary approach (archaeology, geography, ethnography, soil science, agronomy), from a multi-scale (from local to European level) and with a diachronic perspective (from antiquity to the present day). In order to consider the various mechanisms of appropriation and transformation of the environment by the societies, the project focuses on the analysis of various types of cultural landscapes of the Iberian Peninsula, especially selected by the morphology of their agrarian systems: one of the most homogeneous expressions of the interaction between man and territory: 1) mountain landscapes of Sierra del Segura (Albacete) and Sierra de Aitana (Alicante), characterized by small height villages of Islamic origin with an agropastoral economy. The element that characterizes the agricultural systems of these communities is the terrace farming: plots created to take advantage of the mountain slope where are developed infrastructures for the exploitation and distribution of water resources (cultural landscapes generated from the Islamic period to the present day, still in use). 2) plain landscapes of Campo de Hellin (Albacete), the Valle del Vinalopó (Alicante) and Vega Baja del Segura (Alicante), characterized by exploited agricultural environments without interruption from antiquity to the present day, but with different strategies (Roman villas, early medieval rural villages and farmhouses, medieval fiefdom, contemporary agrarian colonies). Our study focuses on understanding how historical societies have occupied and administered this space, characterized by a shortage of water resources.

TH2-11 Abstract 16
Landmarks and landscape in the South Eastern Sicily

Author - Dr. La Terra, Lia, Novara, Italy (Presenting author)
Presentation Preference - Poster

South-Eastern Sicily provides a privileged view for the analysis of the impact on the culture of “Sikels”, thanks to its huge variety of indigenous settlements dated to the Iron Age and concentrated around the Ionian coasts, which were early visited and occupied by Greek colonists. Nonetheless, the archaeological debates and researches have been always concentrated in a Greek point of view, leading indigenous archaeology as a “niche archaeology”, where sites are even not well preserved and inserted in the archaeological potential resources.

For these reasons, I would like to focus on the analysis of the indigenous sites of the Hyblean Area. The portrait that has been revealing forces me to leave the well-known ethnic classifications and characterizations, getting close to the concept of “hybridity”. In fact, Greeks and indigenous people have developed an interactive dialogue that highlights the creation of a “third space” or “middle ground” that is not indigenous nor stranger, rather a cultural melange generated by the meeting between the two parts, well visible in the social exchanges, osmosis of ideas and material culture.

Re-centring the specificity of the indigenous archaeology could be an important way to reconsider also the archaeological landscape nowadays and promote new strategies of development of the area. In fact, the case of the South eastern sites is emblematic to describe a shared situation for a considerable number of sites in the Region that are affected by lack of funds and absence of great managing plans. Investigating further the relationship between sites and their natural landscape might be very interesting. Prehistorical sites in Sicily (e.g. Pantalcata, Cassibile, Thapsaco, Monte Finocchito) are set on beautiful and breathable scenarios and the boundaries between archaeological landscape and natural-rural landscape are full of overlaps and possible links. This fact could suggest the idea of possible integrated landscapes where naturalistic tracks, rural traditions and archaeological sites are linked together in unified managing plan for preservation and tourism.

It is still detectable the complete harmonisation of archaeology remains into the rural landscape and the landmarks of rock-cut architecture, still used nowadays in agriculture, as a reference for the ancient deep relationship between humans and landscape and an ancestral proof of the respectful use of the land that the rural civilisation of the area has been promoting since its origins.
GIVING NEW MEANING TO CULTURAL HERITAGE: THE OLD AND THE YOUNG IN PAST SOCIETIES

TH2-13 Abstract 01
Protect or perish: On the outlook for the young and the old in a museum's collections

Author - Head of dep, Høegestoel, Mari, University of Stavanger, Stavanger, Norway (Presenting author)
Co-author(s) - Denham, Sean Dexter, University of Stavanger, Stavanger, Norway

High infant mortality was a fact of life in the past. More children were born than would ever reach adulthood and old age, putting a limit on the potential for interaction between the young and the old. Modern society has seen a change in this. Improvements in healthcare, labour and welfare conditions have increased life spans and altered somewhat how we use our time. This population growth of older adults has spurred the growth of a new stage in the human life cycle on a global scale, one in which older individuals have time and resources not previously available to them. This has changed the dynamic of the present, and increased the potential for interaction between the young and the old. It is possible to see such life-stage interconnections in something as simple as grandparents and grandchildren visiting museums together. None the less, museum outreach programs, activities and research communications rarely highlight this aspect of child-adult relationships in the archaeological narrative about the past.

The research program BEVARES (Biological Environmental and Archaeological interdisciplinary Research on life course, material culture and material in human environments), at the Museum of Archaeology, University of Stavanger, Norway, seeks to address issues surrounding the recovery and curation of organic materials from archaeological contexts, particularly those involving the preservation of human biological remains. Our project within the program focuses on previously excavated material in the museum’s collections which has either not been analysed at all, or not been analysed using up-to-date techniques or standards. The paper presents our attempt to establish an overview of the ex situ skeletal remains (burnt and un-burnt bones) of children versus elders and the contextual evidence of archaeological grave, settlement and loss finds. Not surprisingly, the results indicate that burial rituals together with the frequency of highly acidic soils in the region, are an impediment to the bio-archaeological analyses of the human body and its treatment before and after death. As these conditions strongly influence the preservation of human bone, in particular the remains of inhumations, the possibility of gaining an understanding, both biological and social, of the interconnections of different stages in the human life cycle is of the past are challenging.

Keywords: bio-archaeology, childhood/adult relations, ex-situ preservation

Presentation Preference - Oral

TH2-13 Abstract 02
Mother-child relations in Early Bronze Age Lower Austria

Author - Mag. Dr. Rebay-Salzburg, Katharina, Austrian Academy of Sciences, Vienna, Austria (Presenting author)
Co-author(s) - Appleby, Jo, University of Leicester, Leicester, United Kingdom

The Early Bronze Age inhumation cemeteries of Lower Austria belong to three cultural groups (Lignite, Unterwölbung and Wieselburg) with distinct burial practices. They differ in particular in terms of how bodies were placed and buried in relation to each other. In this contribution we scrutinise the archaeological record for evidence of mother-child relations. We will begin by presenting graves of pregnant women and graves of women and children buried together, in order to understand how such individuals were treated by their societies in death. We investigate the most likely ages for life-transitions such as first motherhood and menopause, as well as to explore material markers of such transitions. Social responses to pregnancy, birth and early childhood rearing, as well as the link between women’s reproductive status and social status in Bronze Age central Europe, give insights into the conceptualisation of motherhood in the Early Bronze Age in general, but also into the variability within three closely connected, yet different groups.

Keywords: Early Bronze Age, motherhood

Presentation Preference - Oral

TH2-13 Abstract 03
Grandparents in the Bronze Age?

Author - Dr. Applesby, Jo, University of Leicester, Leicester, United Kingdom (Presenting author)
Co-author(s) - Rebay-Salzburg, Katharina, Austrian Academy of Sciences, Vienna, Austria

Grandparenting has been critical to the development of human life history. It has even been suggested that the role of grandparents in childcare is the reason for the extended lifespan seen in modern humans. However, the roles and functions of grandparents have not previously been investigated in later prehistoric contexts. Ethnographic studies show that grandparents take on an extremely wide range of roles worldwide, whether this is teaching knowledge and skills, providing childcare, or even taking on parental roles and titles. In many cases, grandparents play a critical role in the support and socialization of children. Understanding the roles of grandparents thus has the potential to transform our understanding of prehistoric household and family structures. In this paper, we examine the potential impact of grandparents in prehistory. We will use demographic data to explore how ‘common’ grandparents might have been, whilst bringing in a variety of ethnographic examples to identify potential activities and relationships of grandparents and grandchildren. We will then use a case study from the Early Bronze Age Tresental in Austria to show how prehistoric mortuary data might inform us about grandparenting in the Early Bronze Age. The existence of a series of large, well excavated cemeteries from this area makes it possible to investigate how the idea of the ‘grandparent’ might have been constituted both in life and death. In addition, we will investigate the extent to which grandchildren may have had a reciprocal role in caring for grandparents who became incapacitated either physically or mentally through diseases of old age.

Keywords: Bronze Age, motherhood

Presentation Preference - Oral

TH2-13 Abstract 04
The white-haired and the feeding bottle: Exploring children-elderly interactions in LBA Aegean

Author - Dr. Gallou, Chrysanthi, The University of Nottingham, Nottingham, United Kingdom (Presenting author)

Societal scholarship on age and gender in prehistoric Greece has taken an adult-centric approach (with focus mostly placed on young to middle-aged men and women) and, as a result, the roles and significance of children and the elderly – have been widely neglected. However, lacking a strong insight into attitudes towards these two age groups, archaeologists do not really harbour a concept of the whole span of life in the Greek-speaking and the non-Greek speaking societies that developed in the Aegean region during the 2nd millennium BC. Making children and the elderly visible in the archaeological record, examining the situation requires a broader dialog about the application of analytical and interpretive models and techniques of an analogous or experimental nature in order to better understand and the archaeological evidence of human remains. An invitation is put forward for the establishment of a working group focusing on relationships between the young and the old in past societies.

TH2-13 Abstract 05
Protect or perish: On the outlook for the young and the old in a museum's collections

Author - Head of dep, Høegestoel, Mari, University of Stavanger, Stavanger, Norway (Presenting author)
Co-author(s) - Denham, Sean Dexter, University of Stavanger, Stavanger, Norway

High infant mortality was a fact of life in the past. More children were born than would ever reach adulthood and old age, putting a limit on the potential for interaction between the young and the old. Modern society has seen a change in this. Improvements in healthcare, labour and welfare conditions have increased life spans and altered somewhat how we use our time. This population growth of older adults has spurred the growth of a new stage in the human life cycle on a global scale, one in which older individuals have time and resources not previously available to them. This has changed the dynamic of the present, and increased the potential for interaction between the young and the old. It is possible to see such life-stage interconnections in something as simple as grandparents and grandchildren visiting museums together. None the less, museum outreach programs, activities and research communications rarely highlight this aspect of child-adult relationships in the archaeological narrative about the past.

The research program BEVARES (Biological Environmental and Archaeological interdisciplinary Research on life course, material culture and material in human environments), at the Museum of Archaeology, University of Stavanger, Norway, seeks to address issues surrounding the recovery and curation of organic materials from archaeological contexts, particularly those involving the preservation of human biological remains. Our project within the program focuses on previously excavated material in the museum’s collections which has either not been analysed at all, or not been analysed using up-to-date techniques or standards. The paper presents our attempt to establish an overview of the ex situ skeletal remains (burnt and un-burnt bones) of children versus elders and the contextual evidence of archaeological grave, settlement and loss finds. Not surprisingly, the results indicate that burial rituals together with the frequency of highly acidic soils in the region, are an impediment to the bio-archaeological analyses of the human body and its treatment before and after death. As these conditions strongly influence the preservation of human bone, in particular the remains of inhumations, the possibility of gaining an understanding, both biological and social, of the interconnections of different stages in the human life cycle is of the past are challenging.

Keywords: bio-archaeology, childhood/adult relations, ex-situ preservation

Presentation Preference - Oral

Rather than giving on up the human biological material, the situation requires a broader dialog about the application of analytical and interpretive models and techniques of an analogous or experimental nature in order to better explain and understand the archaeological evidence of human remains. An invitation is put forward for the establishment of a working group focusing on relationships between the young and the old in past societies.
Managing the archaeological heritage

Presentation Preference
- Zoega, Gudny, Skagafjordur Heritage Museum, Saudarkrokur, Iceland (Presenting author)

TH2-13 Abstract 05
Family constructions and adult-child relationships in the Ancient Greek Oikos
Author - Sommer, Maria, Skanderborg, Denmark (Presenting author)

Keywords: Adult-Child relationships, Ancient Greece, Childhood Archaeology

Presentation Preference - Oral

The presentation will focus on family constructions in the ancient Athenian oikos with special attention to children age 0-7 years. Research points to the fact that children in the ancient Greek household - the oikos - grew up in an extended family with multiple relationships with parents, grandparents, siblings, friends, slaves and caregivers. The theories of allpairing and multiple caregiving are introduced to give insight to the complex world of children and their peers in the ancient Greek oikos.

This research has been published in: Sommer, M. & Sommer, D. (2019). Care, Play and Socialization in Ancient Attica – A Developmental Childhood Archaeological Approach. (DK: Aarhus University Press).

TH2-13 Abstract 06
Circle of Life? Aspects on youth and old age in Viking Age and Medieval Scandinavia
Author - PhD Mejishom, Lotta, Uppsala, Sweden (Presenting author)

Keywords: Age construction, Burials, Viking Age

Presentation Preference - Oral

In Viking Scandinavian society, people were to a high extent defined and commemorated by their deeds. The productive, freeborn, preferably male, adult formed a societal norm, to which children, slaves, outcasts, unproductive elders and “others” were contrasted. Consequently, and as a result of contemporary academic paradigm, children, and elderly has often been tagged as “invisible” in the records available. Nothing could be more wrong.

In this paper, the sphere of children and elderly in Viking Age and Medieval Scandinavia is explored, as a specific culturally and socially defined construction, contrasted to the normative adulthood, as displayed in textual and archaeological records. In medieval provincial law codes, a clear distinction between man slaughter (killing an equal, a free adult man) and killing children or elderly people, unable to defend themselves, is made. In case of the latter, the killer was charged with a significantly more severe penalty. The defenceslessness of these household dependent is expressed in terms of limited capabilities, which, is argued, is a relevant definition also in academic discussion.

In the burial records from Late Viking Age and Early Middle Age, graves of elderly, impaired, sick people and children in many cases differ from those of the productive adults. One specific phenomenon is approached in this paper, namely the use of amber beads among the elderly. Amber has been used as protective agent in Viking Age, i.e. as amulets attached to swords. A similar understanding could be used considering the burial arrangements for elderly and young. Characterised by a state of dependence and limited capabilities, but also specific legal and magic protection, the young and the old seem to represent a distinct social category within the household. Likewise evident, the youngest family and household members, the unbaptized and newborn infants, were yet to enter this specific sphere.

Is it possible that this correspondence between age identity of the young and the old represent a Viking Age cyclic view of life? Perhaps so, but there might be reasons not to simplify our interpretation of the complex eschatology interacting with reality in Viking Age society.

TH2-13 Abstract 07
The old and the young in the Icelandic early Christian household cemetery
Author - Zoega, Gudny, Skagafjordur Heritage Museum, Saudarkrokur, Iceland (Presenting author)

Keywords: Bioarcheology, Household, Medieval

Presentation Preference - Oral

In recent years a number of early Christian cemeteries have been excavated in the region of Skagafjörður, North Iceland. These cemeteries belonged to, and were managed by, occupants of individual farms and were in use from around AD1000-AD1100. The burial records show that all individuals were buried in the local nature: sex and age. In this paper the archaeological data from these cemeteries is presented giving insight into the complex world of children and the elderly both at household level and in the context of chaînes opératoires during this period.

TH2-13 Abstract 08
Interpreting Multiple Interments in Irish Medieval Burial Grounds
Author - Dr. Murphy, Eileen, Queen’s University Belfast, Crumlin, Northern Ireland, United Kingdom (Presenting author)

Keywords: funerary archaeology, relationships, skeletal remains

Presentation Preference - Oral

Burials that contain the remains of two, three or even larger numbers of individuals are occasionally discovered during excavations of medieval Christian burial grounds in Ireland. In the majority of cases the remains are those of neonatal infants – perhaps indicative of a multiple birth – in which the infants did not survive, while other examples may comprise the burial of two or more adults. In other instances a full-term fetus remains within the mother’s abdominal region and clearly died prior to delivery. Cases also arise in which a neonate has been interred with an adult female, and it seems likely that many of these may represent cases where both a mother and her baby had died shortly after delivery. Other examples have been discovered in which an adult male was buried with an infant or an older child was buried with an adult. This paper will explore the evidence for multiple burials derived from medieval burial grounds in Ireland. Drawing upon information gleaned from oral history and contemporary historical sources attempts will be made to proffer possible scenarios to account for such burial configurations and to explore the nature of the potential relationships apparent within these various interments.

TH2-13 Abstract 09
Infants and elders: a bioarchaeological investigation of a Reformation Church in Hungarian Transylvania
Author - Dr. Bethard, Jonathan, Boston University, Boston, United States of America (Presenting author)

Co-author(s) - Osterholtz, Anna, Mississippi State University, Starkville, United States of America
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Keywords: bioarchaeology, Reform Church, Transylvania

Presentation Preference - Oral

Bioarchaeologists have added a great deal to what is known about past peoples from numerous time periods and geographical periods. Recent contributions to the field have pushed scholarship in exciting new directions thanks to theoretical and methodological frameworks which include both the youngest and oldest members of society. Bioarchaeologists are now exploring questions related to both infants and the invisible elderly; however, few archaeological contexts present scenarios where both cohorts have been recovered together. Indeed, few scholars have addressed questions related to the interactions of people who lived at the extremes of the human lifespan, as these contexts seem to have alluded bioarchaeologists until now. In this talk, a unique mortuary context from an excavation at a Reform Church in Hungarian Transylvania will be discussed. In 2007 archaeologists participating in a salvage excavation recovered remains of 70 individuals buried beneath the floor of a Reform Church in the community of Teliadfa (Tele), Romania. The majority of these inhumations were dated to the 17th century and do not appear to have survived long after birth. In addition to the neonatal individuals, the remains of an elderly female individual were recovered from the same stratigraphic context. In this talk, the relationship between these individuals will be explored and tied to a growing body of literature investigating the archaeology of the Reformation.
The search for the elderly: using osteological data to divide and join age identity

Author - Pescheck, Sabine, Bradford, United Kingdom (Presenting author)
Co-author(s) - Maaranan, Nina, University of Bradford, Bradford, United Kingdom
Co-author(s) - Buckberry, Jo, University of Bradford, Bradford, United Kingdom
Co-author(s) - Armit, Ian, University of Bradford, Bradford, United Kingdom

Keywords: age identity, elderly, old age

Presentation Preference - Poster

Inquiries into age identity have only recently received attention, despite the recognition of gender identity in archaeology. Particularly elderly individuals are often ignored or treated with the assumption of a universal experience of old age. Traditional age estimation methods have failed to provide more accurate estimates to aid in the identification of aged skeletons. Individuals of 45+ years are often lumped together, ignoring any potential social differentiations in the later stages of the life course. In this study, the Transition Analysis has been utilized on the Iron Age cemetery collection of Wetwang Slack, East Yorkshire, UK, using the method’s statistical approach to provide more accurate age estimates for older individuals. Additionally, data on sex and age-progressive conditions including osteoarthritis, general spinal degeneration and dental health has been collected to investigate the social identity of elderly adults in comparison to younger adults. Using a sample of 150 individuals, the Transition Analysis provided a more dynamic age profile which shows that age differences are found across gender lines and in terms of disease likelihood. Elderly females have especially stood out since they showed a substantial increase of spinal degeneration of the vertebral bodies, caries and tooth loss as compared to elderly males who show a significant decrease or stagnation in these conditions. Other females however in common with younger adult females the severity of spinal osteoarthritis in the facet joints in comparison to the young male - elderly male grouping which is less affected. Females generally appear to be more affected by disease, yet elderly females of this population are particularly haunted by ill health which ultimately may have made their deaths and presence in this cemetery more likely. Death also is an important aspect of this women's identity. Other forms of identity are highly important in gauging age differences and relationships between young and old. Age only becomes visible through the growing, gendered or diseased body as a medium in the social experience of age. The archaeological interpretation of osteological data shows that Wetwang Slack age groups have various relationships to one another depending on sex, health or even affected body location. This triad of age estimate, sex affiliation and disease status has proven useful in separating the elderly social identity from that of young adults in a way which provided especially elderly Wetwang Slack females with a kind of personality without ignoring their relationships to other age/gender groupings. In life as in death, elderly women stood out physically from the younger individuals of their community, while their relationship to younger females may indicate greater success in surviving the adversities associated with the female experience at Wetwang Slack.

Detecting the elderly - Exploring age using Transition Analysis

Author - Maaranan, Nina, Helsinki, Finland (Presenting author)
Co-author(s) - Buckberry, Jo, University of Bradford, Bradford, United Kingdom
Co-author(s) - Armit, Ian, University of Bradford, Bradford, United Kingdom

Keywords: Adult age-at-death estimation, Life history, Transition Analysis

Presentation Preference - Poster

The absence of elderly in research is not simply a question of attitudes but of methodological limitations. Intrinsic and extrinsic factors govern the skeletal changes in relation to one another, their importance fluctuating during the life course of the individual. The young are much more dependent on the intrinsic (i.e. genetic) factors however with age the extrinsic factors (such as habitual and environmental) gain influence, spreading the skeletal morphological features to a wider age range. Due to the lack of a perfect age indicator methods used to estimate age-at-death, we must accommodate for the variation using age ranges which often present the final interval as open-ended and beginning even as early as 45 years of age. The practice has the impact of obscuring the presence of older individuals from archaeological material, distorting our views of agency in past societies. This poster seeks to explore how we can better identify the elderly using osteological age-at-death methods.

A known-age-at-death sample from the Finnish osteological collection, held at the Finnish Museum of Natural History, was tested using Transition Analysis, the Buckberry-Chamberlain auricular surface method and the Suchey-Brooks pubic symphysis method. All three methods performed well, however only Transition Analysis, a statistical method relying on Bayesian probability, could be used to observe characteristics of age ranges due to its functional principles. The greatest uncertainty lies between ages circa 40 and 70, as could be expected due to individual variation, but age ranges plateaued and decreased after middle age (Miler and Boldsen 2012). The results imply that uncertainty does not increase indefinitely, contrary to previous beliefs. This study advocates the use of individual-specific age estimates, allowing for better differentiation of 45+ older adults, which in turn will improve understanding of the entire life course and bring much-needed attention to the elderly, inviting them to the sphere of social agency and interaction.
greater community participation in caring for this resource the Heritage Council of Ireland has launched a pilot Adopt a Monument Scheme in 2015-16. The experience gained from this will be shared at the round table. All the time of writing this scheme, learning from work in Scotland, has progressed from an open public call for entries to selecting monuments and communities. Further details will be available in September.

TH2-14 Abstract 03 Community Outreach and Engagement through Archaeology Fairs

Author - Dr. Thomas, Ben, Archaeological Institute of America, Boston, United States of America (Presenting author)
Co-author(s) - Langlitz, Meredith, Archaeological Institute of America, Boston, United States of America
Keywords: Community Engagement, Heritage Education, Partnerships
Presentation Preference - Oral

Since its founding in 1879, the Archaeological Institute of America (AIA) has worked to create an informed public interest in the cultures and civilizations of the past through its many outreach programs. The Institute educates people of all ages about the significance of archaeological discovery and encourages community-based outreach. In 2001, the AIA hosted its first archaeology fair. The fair brought together independent archaeological organizations representing a rich array of archaeological fields to present their programs and resources to a local community in an interactive and engaging manner. Through the fair, the partnering organizations, presented activities that combined the excitement of discovery with sound archaeological thinking; emphasized the idea that archaeological discoveries are resources that help us better understand how people lived in the past and how human societies and communities functioned; developed, and grew; and informed attendees about archaeology and cultural heritage by having them participate in hands-on activities, by observing demonstrations of ancient technologies; and by talking to the experts presenting these various programs. Since 2001, the AIA has organized 23 more archaeology fairs and informed thousands of people through this popular outreach activity. The overall aims of the archaeology fairs are to promote a greater public understanding of archaeology, raise awareness of local archaeological resources, and bring together proximate archaeological groups with a shared outreach goal. In this presentation, the authors will discuss how the AIA fair model was developed through feedback cycles that include evaluation, data analysis, reflection, and trial and error, how it evolved, and how it is spreading to other groups around the world. To date, 26 AIA local societies have hosted fairs and the popularity of this program as an outreach event is increasing among other archaeological groups across the USA as well as in Belize, Canada, Colombia, the Czech Republic, Iran, and Myanmar. This growth in popularity and implementation presents us with unique opportunities to collect and reflect upon data essential to conducting archaeological outreach around the globe.

TH2-14 Abstract 04 The “archaeological path” in the interdisciplinary research in Polish Jurassic Highland

Author - MA Majorek, Magdalena, Nicolaus Copernicus University Torun Poland, Torun, Poland (Presenting author)
Co-author(s) - PhD Lawnowicz, Olgaer, University of Lodz, Lodz, Poland
Keywords: archaeology, Jurassic Highland, interdisciplinary research, places of memory and forgetfulness
Presentation Preference - Oral

The project, called Places of memory and forgetting, interdisciplinary research, places of memory and forgetfulness, has progressed from an open public call for entries to selecting monuments and communities. Further details will be available in September. The project distinguished three complementary research paths: anthropological, archaeological, historical/archival and a common path. Cultural anthropologists use the photographs, written materials, archives, documents and available publications. For them, the source of knowledge about the past and the present is orally primary historical, heard stories from encountered people. Within the queries historians collect general information about the regional history, as well as about specific places and objects, often not adequately developed in the academic literature. In the discussed approach to answering the question whether: in particular a place and material elements of culture capable to confirm, deny or modify the knowledge of the past emanating from collected stories. Archaeological diagnosis was divided into two stages: reconnaissance and non-invasive research (including aerial survey). In the first stage of the archaeological diagnosis, archaeologists investigate the available source base and makes an initial reconnaissance of the municipality. Then divide objects (places), which have been proposed for research by anthropologists, into three categories: A - objects studied non-invasive methods, which does not require detailed documentation; B - objects studied non-invasive methods, requiring accurate documentation; C - objects studied non-invasive methods, requiring accurate documentation, subjected to additional investigation using a metal detector, drill and survey trenches. Established in the course of archaeological field research documentation (ie. the description card of places, photographs, drawings, movable monuments: artifacts and edificias and their inventories, provides a database for a detailed analysis of the results of archaeological research at the level of a single place (object), as well as the analysis of a set of places in the municipality. The project is implemented under the National Programme for the Development of Humanities funded by the Ministry of Science and Higher Education in Poland.

TH2-14 Abstract 05 Role of archaeology in rise and fall of local tourist industry. A warning example from Finland

Author - Laulumaa, Vesa, The National Board of Antiquities, Helsinki, Finland (Presenting author)
Co-author(s) - Ojala, Ingemar, The National Board of Antiquities, Helsinki, Finland
Keywords: Local involvement, Media, Tourism
Presentation Preference - Oral

In June 1996 paleolithic stone tool was found in Susiluola cave in western Finland. As the first known paleolithic site in Scandinavia it received plenty of attention in national media. Soon after the first find was revealed and reported in media, the site was visited by thousands of people and local economics was boosted by the visitors. Tourism flourished. Hats, t-shirts, food, exhibitions, bars and restaurants were named after the site. Archaeologists, on the other hand, were not happy that their precious archaeological site harnessed for a tourist business and were criticising local efforts as pathetic. Local communities were planning to invest millions for the future attractions, like Ice Age Centrum and even an opera. In meanwhile there was a growing debate among archaeologists if the finds and the site was paleolithic or not, it was also acclaimed to be a hoax. Critics grew stronger also in the media. Debate cast a long shadow over the site and affected the public opinion. Attraction faded away and tourism collapsed. Last excavations season was in 2006. The debate concerning the authenticity of the finds and cave as a paleolithic is still unsolved.

New discoveries in archaeology get usually attention from media and public. Growing interest can turn archaeological site to tourist attraction and raise local tourist businesses. In the best case this will lead to fruitful cooperation between archaeologists, local officials, entrepreneurs and public. It is also possible, that overenthousiastic start can lead to very disappointing end for all parties involved.

TH2-14 Abstract 06 My Home Ground - past and present

Author - Hjel Madsen, Lene, Museum skanderborg, Skanderborg, Denmark (Presenting author)
Co-author(s) - Dissing, Nina Bangsbo, Municipality of Skanderborg, Skanderborg, Denmark
Keywords: Archaeology, History, Tourism
Presentation Preference - Oral

Escape is a concept that adds energy and historical context to newly developed suburban sites. When an excavation site has been “emptied” for historical data by the archaeologists and the area has been developed for modern life, it is important to tell the unique story of the place to newcomers as well as the people who already live around the site. This can be done in many ways. Our experience is that bringing in Art into the process lifts the story-telling - and a work of art as well as the presence of an artist at Work - result in increased local communication and also make the site a point of interest for tourists. The concept eScape combines art, archaeology, past and present and creates and communicates art on sites with strong archaeological evidence combined with the scientific excavations. Specialists in Tourism, Art and Archaeology work together and combine the three on equal terms with the participation of locals and children. Escape makes a crucial difference from non-participation to ownership.

TH2-14 Abstract 07 Giving is having! Everybody is winning!

Author - Archeolog Lesel, Krietta, Pirkanmaa Provincial museum, Tampere, Finland (Presenting author)
Co-author(s) - Moininen, Ulla, Pirkanmaa Provincial museum, Tampere, Finland
Keywords: cooperation, local people, openness
Presentation Preference - Oral
Pirkanmaa Municipal Museum has conducted excavations on a very unique Late Iron Age / Early Medieval dwelling place during the past years. The first discoveries were made by the local people, who have been familiar with the place for decades. The site has attracted an extraordinary amount of interest from various operators: a large museum centre and a small local museum seeking to enhance its activities; a university and independent researchers with personal interest in the site and its material; local authorities wishing to develop tourism. Pirkanmaa Municipal Museum has made research material and information freely available to all, and established contacts with many different operators and experts. With a little effort from everybody, the enthusiasm is clearly spreading. But how well do the different players cooperate? Will the outcome be a large-scale exhibition, a new tourist attraction, and a new multidisciplinary research project, as planned? The paper deals with archaeological excavation project as a societal concept, which creates working interfaces between different operators and sectors of society. The current and potential role of the museum as an enabler of new kinds of activities and projects will be discussed. It is noted that transparency, publicity, contacts, and efficiency are the most important basis for cooperation, and required in managing a research project with lower level of resources than normally.

- But this is only a cosmetic touch up.
- The reaction of archaeologists has been to largely ignore this market. But the volume of finds entering the market reached
- Recently, the internet offers an easy and growing platform for rapid exchange of archaeological artefacts, the sheer volume of
- Antiquities as the ‘hottest invest’ (TIME-Magazine, 12/2007) are one of the biggest problems of archaeology. Finds derived from unauthorised excavations, metal detectoring, robberies of museums/public collections, appear on the market with
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- The legislation of the Republic of Croatia allows for the sale of individual archaeological finds or entire collections to museums, if the seller can prove the origin of the cultural good in the sense of family legacy or heritage. In practice, the easily obtainable confirmation of a notary on the origin of the good is the only thing required to prove the legality of such possession and to enable such sales.
- The Archaeological museum in Zagreb possesses a certain amount of finds acquired in this way and which have a ‘questionable’ origin, and, as the parent institution, it works on entire collections which were subsequently seized from the same collectors which could, only a few years back, make legal trade with the Museum and were legally protected by the aforementioned notary confirmation on family heritage.
- What can museums do to prevent illicit trading, archaeological excavations and trafficking?
- It is understandable that archaeological museums cannot change the legislation, but their social role is to point out legislative flaws, and I feel that they should individually label collectors outside the law, sellers and malicious metal detector users by highlighting finds obtained in this way in permanent exhibitions and publications, just like they highlight well-intentioned donors. But this is only a cosmetic touch up.

During the last EAA-meeting in Glasgow, the idea rose to re-create an EAA commission on illicit trafficking of archaeological heritage. Our round table is organised by the Working group of this commission.

Antiquities as the ‘hottest invest’ (TIME-Magazine, 12/2007) are one of the biggest problems of archaeology. Finds derived from unauthorised excavations, metal detectoring, robberies of museums/public collections, appear on the market with faked provenience, and are legally sold. The majority of illegal/illicit finds that enter the market, seemingly entirely legally, go unacknowledged by archaeologists. Only rarely do such finds later surface and only few, like the spectacular find of the Bronze Age Nebra-disc, are acknowledged by the wide public. In the case of more mundane finds this rarely ever occurs.

Today, the internet offers an easy and growing platform for rapid exchange of archaeological artefacts, the sheer volume of sales making it hard to keep track of newly advertised finds and sales. Thousands of archaeological artefacts are daily presented through mediums such as ‘treasure hunter’ internet platforms, advertised and sold online through outlets and sold through licensed auction houses.

The reaction of archaeologists has been to largely ignore this market. But the volume of finds entering the market reached already the point where we must begin to address the lack of knowledge, and to what degree our legitimate archaeological find corpus is any longer truly representative, and whether it alone remains valid for future research.

We will focus in particular on how to:
- prevent and limit trafficking and selling of cultural heritage in Europe (especially trafficking of antiquities from the Near and Middle East);
- reduce illegal excavations in Europe;
- develop strategies for a common European legal basis on the protection of archaeological sites;
- Furthermore, we want to discuss an official statement for the EAA concerning illicit trafficking of antiquities.

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**ILICIT TRAFFICKING OF CULTURAL HERITAGE: DIFFERENT STRATEGIES TO FIGHT IT**

Saturday, 3 September 2016, 11:30-13:00
Faculty of History, Room 329

**Presentation Preference:** Round table

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**TH2-16 Abstract 01**

**Acquisition policy - first line of defense**

**Author:** Domiter, Ozren, Archaeological museum in Zagreb, Zagreb, Croatia (Presenting author)

**Keywords:** consensus in collecting policies, labeling malicious collectors, raising social awareness

**Presentation Preference:** Oral

The legislation of the Republic of Croatia allows for the sale of individual archaeological finds or entire collections to museums, if the seller can prove the origin of the cultural good in the sense of family legacy or heritage. In practice, the easily obtainable confirmation of a notary on the origin of the good is the only thing required to prove the legality of such possession and to enable such sales.

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What can museums do to prevent illicit trading, archaeological excavations and trafficking?

It is understandable that archaeological museums cannot change the legislation, but their social role is to point out legislative flaws, and I feel that they should individually label collectors outside the law, sellers and malicious metal detector users by highlighting finds obtained in this way in permanent exhibitions and publications, just like they highlight well-intentioned donors. But this is only a cosmetic touch up.
Managing the archaeological heritage

Illicit trafficking of archaeological heritage

The phenomenon of illicit trafficking of archaeological heritage is a major concern. Often, the illegal market thrives on the looting of ancient shipwrecks, resulting in the loss of valuable artifacts. Metal detectors have played a significant role in this process, enabling the quick and easy discovery of artifacts. However, the use of metal detectors is not without its drawbacks, as it can lead to the destruction of context and the removal of materials from their original location.

The beginning of the 1990s saw a significant increase in the number of illicit trafficking cases, with a large number of artifacts, mainly amphorae, being discovered. This trend continued throughout the war and post-war periods of the 1990s and 2000s. The beginning of the 1990s saw a wide range of problems concerning the illegal market.

The systematic and inspiring raising of social awareness through educational (equally pedagogy and andragogy) museum policies of archaeological museums, made in cooperation with legal experts, is a key step in preventing illicit behavior regarding the illegal market.

In this paper, the author is going to present samples of cultural heritage destruction in Syria and Iraq. Also, he will present a strong suspicion by professional archaeologists that films and television series such as Saving Private Ryan (1998) and Band of Brothers (2001), as well as significant anniversaries can intensify the problem.

The pragmatic and ethically possible approach to the preservation of cultural heritage is a key step in preventing illicit behavior. During the presentation, the author is going to present samples of cultural heritage destruction in Syria and Iraq. Also, he will present a strong suspicion by professional archaeologists that films and television series such as Saving Private Ryan (1998) and Band of Brothers (2001), as well as significant anniversaries can intensify the problem.

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TH2-17

CLIMATE CHANGE AND HERITAGE: IMPACT AND STRATEGIES

Thursday, 1 September 2016, 14:00-18:30
Faculty of Philology, Room A2

Author: Biehl, Peter F, University at Buffalo, Buffalo, United States of America
Co-author(s): - Curtis, Caitlin, SUNY Buffalo, Buffalo, United States of America
- VanDrup Martens, Vibeke, Norwegian Institute for Cultural Heritage Research, Oslo, Norway
- Biehl, Peter F, University at Buffalo, Buffalo, United States of America
- Dalen, Elin, Riksantikvaren/Directorate for Cultural Heritage, Oslo, Norway
- Johansen, Kristine, Riksantikvaren/Directorate for Cultural Heritage, Oslo, Norway

Presentation Preference - Oral

Cultural Heritage represents more than a modern-day capital resource - it is our legacy from the past and our legacy for future generations. Cultural Heritage leaves a profound imprint on our lives, our cities, and our nations. Although 'Climate Change' can be defined differently by researchers and misunderstood by the popular media, and thus refer to a multitude of various things, recent research on sea-level change, melting glaciers and permafrost areas - just to name a few - have motivated the global heritage community to begin asking questions about how to better research the impact and effects of climate change on our cultural heritage, as well as to develop sustainable strategies and mitigation tools to preserve it. Since the introduction of the Valletta Treaty, in situ preservation has increasingly become the preferred option in cultural heritage management. However, to ensure continued preservation, one needs to know what is currently preserved and to what degree, as well as to what extent changes in temperature, precipitation, or sea level will affect continued preservation. If sites are threatened by these changes, we should be prepared with strategies for how to manage this. These can range from strategies to mitigate the effects to tools to decide when in situ preservation is no longer an option, such that the only way to save a site is by excavation and digital documentation. This session thus invites speakers to discuss such themes as impacts of climate change on cultural heritage sites, evaluation of site degradation, and sustainable mitigation strategies for different site types.

TH2-17 Abstract 01

Threats to Heritage and the Distributed Observing Network of the Past: A Northern View

Author - Prof. McGovern, Thomas, Hunter College CUNY, New York, United States of America (Presenting author)
Keywords: Climate Change and Heritage: Impact and Strategies, Climate Impact, Heritage Loss, Northern Presentation Preference - Oral

Climate change is impacting archaeological sites all over the world, as rising sea levels, increasing storminess, wind erosion, and a range of extreme weather events damage sites and monuments. These processes are ongoing, and in northern and alpine regions the threat of rising soil temperatures and "melting middens" broadens the threat to sites far inland. In SW Greenland, recent survey data indicates only a handful of sites retain once excellent conditions of organic preservation (three of nearly a hundred sampled). In the Bering Sea and N Alaska sites spanning thousands of years are going into the sea across broad coastlines. This loss impacts both cultural heritage and the scientific value of "a distributed observing network of the past" of great value to modern resource managers, climate modellers, and planners for a sustainable future. A host of new techniques including aDNA, stable isotopes, and trace element analyses are now broadening our understanding of past food webs and biogeography - just as some of our most valuable archives are being destroyed forever. However, multiple agencies and communities are coming together to address these threats, combining disciplinary science and humanities within a full engagement of local communities. This paper presents some of the strategies for collaboration being developed in cooperation with the Society for American Archaeology's Climate Change Strategies and Archaeological Resources committee and the IHOPE Threats to Heritage and the Distributed Observing Networks of the Past program.

TH2-17 Abstract 02

Mitigating Climate Change Effects on Heritage Sites

Author - Drs Martens, Vibeke VanDrup, NIKU - Norwegian Institute for Cultural Heritage Research, Oslo, Norway (Presenting author)
Keywords: in situ preservation, mitigation, Northern Norway Presentation Preference - Oral

Future climate change is expected to raise sea levels, increase temperatures and change the overall precipitation patterns, with a potentially great negative effect on preservation conditions. How should cultural heritage management respond to these threats? In order to prepare adequate mitigation schemes, it is necessary first to know exactly what is at risk of being preserved, what state it is in now, and what the conditions for in situ preservation are. Degradation of archaeological remains depends on environmental conditions. Which measures may be taken to mitigate the predicted climate changes and ensure continued in situ preservation of heritage sites? Should they be covered, or can changes in soil chemistry be stopped? Studies in Northern Norway are used to demonstrate impacts and possible mitigating actions.
Scotland’s vast coastline contains a wealth of archaeological sites, many buried under shifting sand dunes which has led to remarkable levels of preservation. Coastal erosion, accelerated by climate change, is impacting on thousands of these invaluable heritage assets. In recognition of the severity of the threat, the SCAPE Trust was established with a remit to research, conserve and promote the archaeology of Scotland’s coast.

Since the mid-1990s, Historic Scotland (now Historic Environment Scotland), has sponsored a series of Coastal Zone Assessment Surveys (CZAS) of the coastline in order to quantify the condition and threats to Scotland’s coastal archaeological resource. These surveys have targeted vulnerable areas and covered over 40% of the entire coastline. As well as assessing the geology, geomorphology and erosion risk of coastal cells, more than 11,500 heritage sites have been recorded. A prioritisation process taking account of a site’s value, vulnerability and condition classified nearly 1,000 sites as requiring attention.

Following prioritisation, SCAPE initiated the Scotland’s Coastal Heritage at Risk Project (SCHARP), which worked with members of the local community to update and enhance this data, focusing on high-priority sites. The citizen science approach created a network of volunteers to monitor vulnerable sites in the dynamic coastal zone. As monitoring alone does not save threatened sites, SCAPE has also worked with community groups to undertake action at locally-valued sites. As preservation in situ is impractical or impossible in many coastal locations, the main aim is to rescue as much information as possible from these sites. A variety of strategies, from innovative digital recording and excavation to relocating and reconstructing sites have been deployed. The next project aim is to reference the updated data generated by SCHARP against the set of national research questions presented in the Scottish Archaeological Research Framework. This will ensure that research is undertaken at sites that will otherwise be destroyed, creating a ‘research / rescue’ framework. The potential of these vulnerable sites to answer research objectives will be shared with the international archaeological community.

A second aim is to map the updated data against the National Coastal Change Assessment. This paper has plotted past change to the coastline and maps future susceptibility to erosion; and the result of the mapping exercise will inform future management of the coastal archaeological resource and highlight national and local priorities for further work.

This paper will present the impact of coastal processes on Scotland’s archaeological heritage, examine some methodologies employed to mitigate the threats sites face, consider the application of citizen science to the problem of coastal erosion and give case studies of some of the differing strategies used to preserve vulnerable coast sites by record.

TH2-17 Abstract 06
Identifying and Mitigating Climate Change Impacts on Heritage Assets in the Trent Catchment, UK

Author: Dr. Knight, David, York Archaeological Trust, York, United Kingdom (Presenting author)
Co-author(s): Howard, Andy J., Landscape Research & Management, Bridgnorth, United Kingdom

Keywords: Climate change, Heritage assets, Landscape analysis
Presentation Preference: Oral

In the UK, the devastating summer and winter floods of the last few years have brought sharply into focus the changing nature of weather patterns, the challenges of future flood risk management under such extreme scenarios, and the need to develop robust strategies for the preservation of the cultural heritage resource. Inevitably, when such disasters occur, emphasis is often placed upon individual localities or groups of built assets and the development of solutions that consider both contemporary and modelled geomorphological processes. Whilst the impact of these major floods on heritage assets has gained some prominence in the media, much of the damage to the cultural heritage resource goes unrecognised as its impact on ‘invisible’ subsurface remains that may be recorded and monitored only by intrusive or remote sensing techniques.

Identification of the range of heritage assets within river catchments and of spatial and temporal variations in the archaeological and palaeoenvironmental resource can assist study of past climatic and environmental changes; the environmental impacts of human activity and the responses of communities to geomorphological processes and events. Particularly in industrial landscapes, such work also has the potential to identify the legacy of past pollution and its impacts upon ecosystems and future geomorphic thresholds.

Whilst the historic environment record has the potential to inform environmental managers, it is important that the archaeological community adopts a holistic approach to examining landscapes, within clearly identified research frameworks that provide equal weight to individual sites and more expansive terrain units. This paper provides an example of such a framework, developed within the Trent catchment along the riverine corridor dominated by the historic mills of the Derwent Valley Mills UNESCO World Heritage Site and supported by Historic England and Derbyshire County Council. This has assisted in the development of toolkits to help characterise the geocultural resource, establish its potential for elucidating past landscape change and develop strategies for responding to future natural events.

TH2-17 Abstract 07
Submerging Heritage: Forecasting Climate Change Impacts to Site Preservation and Research Priorities

Author: Dr. Heilen, Jeffrey, Statistical Research, Inc., Haymarket, United States of America (Presenting author)
Co-author(s): - Allsctt, Jeffrey, Statistical Research, Inc., Tuscon, United States of America

Keywords: archaeological modeling, climate change, heritage management
Presentation Preference: Oral

Globally, climate change represents one of the largest impending threats to the preservation of heritage resources faced today. Some of the most acute impacts to heritage resources are those stemming from rising sea levels and increased storm intensity. These processes are already underway in some areas and will cause increased inundation and erosion of coastal and island resources across the globe. Climate change impacts are expected to increase in their frequency and severity in the coming decades, resulting in compromised integrity or outright destruction of untold thousands of heritage resources, many of which may never be identified before they are gone. Efforts need to be made now to understand the extent of the problem; inventory, record and save what we can rescue; and study important resources that will be lost. Thus, we need to determine where sites are vulnerable to specific climate change impacts, understand how they are likely to be impacted, and prioritize the study and preservation of important resources. To this end, we have developed a modeling approach that first predicts where sites will be located in areas affected by sea level rise or storm surges. We then classify sites into types and through a series of algorithmic transformations prioritize site types by research potential and risk assessment. We highlight our work with two case studies, one from the Atlantic coast of the United States and one from the Baltic Sea region.

TH2-17 Abstract 08
Sun, wind and rain: renewable and non-renewable resources in Wales

Author: Balford, Paul, Cwylt-Powsy Archaeological Trust, Welshpool, United Kingdom (Presenting author)

Keywords: heritage management, renewable resources, Wales
Presentation Preference: Oral

This paper will look at two aspects of the effect of climate change on archaeology and cultural heritage in Wales. Firstly there is the need to reduce carbon emissions by increasing the use of renewable energy. However onshore wind and solar electricity generation has polarised public opinion, with many seeing them as a blight on the landscape. Although installations may have an impact on archaeological and cultural heritage sites, the principal concern – both for heritage professionals and the public – is their impact on the wider landscape and the setting of heritage assets. In many ways the windfarm debate in twenty-first century Wales echoes nineteenth- and twentieth-century contestation over the loss of landscapes when reservoirs were created to supply water to English cities. Secondly, very significant damage to archaeological sites has taken place around the Welsh coastline in recent winters. Erosion has sometimes destroyed the historic environment, but it has also enabled new discoveries. The problem has been in providing resources to ensure that the archaeology is recorded or preserved – and one very successful response has been the ‘Arfordir’ scheme run by the Welsh Archaeological Trusts training large numbers of volunteers to identify and record coastal heritage sites, and the changes that are happening to them. Discussion will focus on the role of archaeological curators, commercial contractors and public bodies in managing these cultural heritage challenges. What impact is climate change having on the cultural heritage, and how effective is the system in Wales at mitigating those impacts?

TH2-17 Abstract 09
Climate change and the effects on cultural heritage in the Netherlands

Author: Kars, Eva, EARTH Integrated Archaeology B.V., Amersfoort, Netherlands (Presenting author)
Co-author(s): - De Moor, Jos, EARTH Integrated Archaeology B.V., Amersfoort, Netherlands
Co-author(s): - Kars, Henk, VU University Amsterdam, Amsterdam, Netherlands

Keywords: Climate change, In situ preservation, strategies cultural heritage
Presentation Preference: Oral

Climate change is a fact. A fact is also that the knowledge of the impact of climate change on the parameters in the soil is very limited. Knowledge on the behavior of soil parameters is very important within in situ conservation programs and therefore we have to work on finding measures to adapt to climate change in relation to conservation of the archaeological heritage.
Moreover, for the coming decades the expansion of the infra structure, for example the directive of renewable energy (see abstract in session Abstract nr. TH2-12), confronts and challenges us how to deal with the known and still unknown climatic impacts on cultural heritage.

In this presentation we will discuss known parameters of climate change and the possible impact on the cultural heritage in the Netherlands, such as more and heavier rainfall, alternating with periods of drought, temperature rise and a predicted sea level rise. Expected consequences of climate change are higher groundwater levels in general, but also very strong changes in water levels between drier and wetter periods. A temperature rise will give longer warm periods, which in turn will prolong the growing season and lengthen the decomposition process of organic material in the soil. Sea level rise can have effect on the salinity of the groundwater, which will result in a more rapid degradation of some of the archaeological data.

Both sea level and intensity peak flows of rivers, require precautions to be taken in the Netherlands. Therefore, the national Flood control program foresees a reinforcement of 700 km of levees within the presence of 15 years long levee systems in the Netherlands contain historic dike remnants. In addition, long the rivers, the shores are being made "natural" again to let the water flow over land to prevent uncontrolled flooding.

These engineering projects give us possibilities to study not only the adaption of man to changing environmental conditions through time, but they also give us a possibility to create different strategies for cultural heritage to be preserved for the future, in relation to expected climate changes. In the presentation some examples will be presented.

TH2-17 Abstract 10
Sustainable energy versus sustainable heritage
in The Netherlands
Author - Kars, Eva, EARTH Integrated Archaeology B.V., Amersfoort, Netherlands (Presenting author)
Co-author(s) - Van Rooyen, Cees, Cultural Heritage Agency of the Netherlands, Amersfoort, Netherlands
Co-author(s) - Berendsen, Ton, Fugro GeoServices B.V., Leidschendam, Netherlands
Keywords: In situ preservation, spatial planning, sustainability
Presentation Preference - Oral

The Netherlands is not only a small country but also a country with large storage of archaeological remains dating from all periods. The Netherlands is also one of the most densely populated areas in the world which means that the archaeological heritage is under severe pressure and is always threatened.

It is a big challenge already to combine the exploration of infrastructure and other expansion and the in situ preservation of the heritage. A consequence of the implementation of the Renewable Energy Directive gives an even larger pressure and a challenge for the culture heritage sector. Now, the Renewable Energy Directive puts new pressures on the peripheral regions, both onshore and offshore.

A hot topic is the Dutch approach for combining all functions, characteristics, consistency into one subsoil spatial planning policy vision called STRONG. This emphasize more and more the involvement of archaeology for the sustainable planning and vice versa.

In this presentation we will discuss how the exploitation of green energy, both offshore and onshore, will challenge the care for archaeological heritage within the Netherlands. What areas are/will be explored? When analyzing the maps of exploration and the maps of the expectations of archaeology in this areas, will you see a conflict or synergy? What type of heritage is threatened and what are the threats in physical damage? And what is the scale of the threats.

But also are there possible advantages for the archaeological heritage? The combination of smart surveys and existing data could be beneficial for windfarming. The ambitions for onshore wind are high but the public opinion is low. Could the investigation of local archaeology have a positive effect on this public awareness for windfarming onshore? Are there major consequences for archaeology in the EU directives or are we only busy with meaningless directives?

TH2-17 Abstract 11
Iced heritage. First World War heritage in frozen contexts in the Alpis
Author - Dr. Nicolai, Franco, Ufficio beni archeologici - PAT, Trento, Italy (Presenting author)
Keywords: Global warming, WW Archaeology
Presentation Preference - Oral

Global warming is changing the alpine landscape. The retreating of the glaciers is a climatic emergency, but is taking with it a cultural emergency. The melting of ice is bringing to light evidence of the human presence at high altitudes from prehistory (Ironman) to contemporary times (First World War structures and bodies). The sudden change in conditions has led to a genuine crisis for the recovery and conservation of finds. There is the further problem of the plundering of sites by collectors, who by illicitly removing finds cause the gradual destruction of the contexts. In this paper the case study of Punta Linke (3629 metres a.s.l. in the Ortles Cevedale group, Trentino region, Italy) is presented. Punta Linke was one of the most important Austro-Hungarian positions of the entire Alpine front during the First World War, close to the frontier between the Kingdom of Italy and the Austro-Hungarian Empire. Archaeological excavations have led to the recovery of the artefacts and uncovered the whole context of the site. Punta Linke, characterised by the presence of a steep cañon in the alps, the original structures found there, have been relocated. In summer 2015 more than 2170 people visited the site during 55 days of opening.

TH2-17 Abstract 12
An integrated approach to sustainability: eco-cultural heritage practice at Aktopraklik, Turkey
Author - Curtis, Caitlin, University at Buffalo, Buffalo, United States of America (Presenting author)
Keynotes: community, heritage, sustainability
Presentation Preference - Oral
Community participation and sustainability are now widely recognized as crucial strategies in heritage practice. This paper thus presents a case study that utilizes an ethnographic methodology, including interviews with over 70 residents in Aktopraklik, Turkey, the local context of Neolithic-Chalcolithic Aktopraklik Höyük. With the initial aim of trying to understand sustainability and heritage within the terms of the community, newly gained information can now aid in forging a symbiotic relationship between archaeological sustainability, environmental sustainability, and community sustainability.

When discussing what was most valued locally, many noted that Uluabat Gölü was among the most cherished assets in town. The lake, upon which the town is located, has long been a site for traditional community festivals, and is now used as a family picnic venue for locals and outsiders alike. The lake also attained Ramsar status in 1998 for its rich wetlands and extraordinary birdwatching opportunities. However, Uluabat Gölü was also the initial site of industrial development in town over 30 years ago, with the first factories to open sitting on the lake edge. These factories deposited waste in the lake, and with time, a place that had been a local source for recreation, fishing, and irrigation became nearly unusable.

In recent years, local government measures to more strictly regulate factory pollution, as well as efforts to clean the lake spearheaded by a local university, have begun to improve the water quality in the lake. However, at the same time, many residents noted the untapped potential of the lake itself for attracting tourists, especially considering the existing tourist attraction of Golya island just a few kilometers away at the center of the lake. Additionally, as Uluabat lake is a valuable resource for local industry, efforts that support additional measures for its maintenance, protection, and management, there are clear pathways here toward the parallel dialogue of archaeological heritage. Similarly, the archaeological site has been threatened by factory development and can be a valuable community and touristic resource. There is therefore significant potential for archaeologists to engage in this broader dialogue of sustainability that includes environmental resources and community concerns. By including the lake in our management strategies, with such simple measures as a litter collection campaign by the excavation team, we can make headway in sustaining a valuable natural and community resource. Moreover, we can open up our site and the region to the benefit of not only heritage tourism but also ecotourism. Consequently, with an integrated approach to not only the sustainability of heritage, but also climate, environment, and community, we can make greater strides toward success in sustainability strategies overall.

TH2-17 Abstract 13
Local Heritage Societies Adapting to Climate Change
Author - Archaeologist Grazh Danielson, Benjamin, Picea kulturav, Fors, Sweden (Presenting author)
Keywords: climate change, adaptation, Dalstain, local heritage societies
Presentation Preference - Poster
During the autumn 2015, SMHI – Swedish Meteorological and Hydrological Institute, published new Climate Scenario Reports for all counties in Sweden. As one of the county archaeologists at the County Administrative Board in Dalarna I was involved in a project about climate change, crisis and cultural heritage, and I suddenly realised how climate change will impact my everyday life. Climate change is not something that will happen in a generation, but will be a real threat churches, old houses and protected buildings. Less frost in the ground will make windfalls, damaging ancient remains in the forests.

In Dalarna, the County Administrative Board, started to inventory the cultural values that could suffer most, and create action plans, and communicate them to the emergency services. As a part of the course Integrated Preservation at Gothenburg University I would like to explore what was happening in other parts of Sweden. The authorities was probably on the track all over the country, but how about the local heritage societies? In this poster I present the results of a survey about climate change and adaptation among local heritage societies in the western part of Sweden.
PREVENTIVE ARCHAEOLOGY, SCIENTIFIC RESEARCH AND ECONOMIC DEVELOPMENT

Saturday, 3 September 2016, 09:00-18:30
Faculty of Philosophy, Room 214p

Authors - Damoule, Jean-Paul, Université de Paris I Sorbonne, Arles, France (Presenting author)
Co-author(s) - Guerrand, Marie-Pa. Instituto Beni Cultural - Regione Emilia Romagna, Bologna, Italy

Presentation Preference - Regular session

Is it possible to reconcile three seemingly contradictory requirements that are 1) infrastructure works and their economic implications, 2) preventive archaeology as set out in national legislations following the Malta convention, and 3) structured and genuinely scientific archaeological research? While legal systems have been put in place in different countries after the signature of the 1992 Malta convention, numerous problems of implementation and reconfiguration still remain, often exacerbated by the 2008 economic crisis. In fact, legal positions have actually been eroded in some countries, and additional constraints such as shortened delays and narrower margins have been imposed on archaeological organisations and operations. Moreover, in countries where archaeology is predominantly conceived as a commercial activity, the crisis has thrown numerous organisations into a cost-cutting spiral, with as a side effect, in many cases, the reduction of standards both in terms of employment conditions and of scientific production.

The current session, building on related sessions and round tables regularly promoted by the “Committee on Archaeological Organisation and Legislation” at previous EAA meetings, seeks to present the current state of affairs with regards to preventive archaeology, legislation and scientific research in various countries. Our intention is not only to critically appraise a range of case studies, but also to provide some more general arguments and tools for thought to those seeking to promote, towards the third decade of the 21st century, this challenging reconciliation of scientific, patrimonial and socio-economic aims.

TH2-19 Abstract 01
Rescue and Preventive Archaeology in Europe: Public Service or Commercial Activity?

Author - Prof. Damoule, Jean-Paul, Université de Paris I, Paris, France (Presenting author)
Keywords: commercial competition, Preventive archaeology, scientific research

Presentation Preference - Oral

While the term heritage normally refers to the transmission of property within a family, the term Cultural or Archaeological heritage refers to a national or ethnic community. Although national identities in the modern sense of the term only appeared in the early 19th century, there have for some time been two different conceptions of the State in the western world. In countries based on Roman law such as France, the State is the main actor in the conception of society. In “common law” Anglophone countries, and especially the USA, the State has never been completely legitimate. This view was further reinforced in the nineteen-eighties through the domination of Milton Friedman’s free-market ideology and the Reagan and Thatcher governments. In a sense, there is no real society any more, only a juxtaposition of consumers, buying or not buying goods and services in a market controlled by an “invisible hand”.

As we know, the State was rediscovered in 2008, when the western banks had to be rescued. Yet this ideology also partly affects the conception of Heritage. Developers are not economic agents threatening our shared archaeological heritage, who should pay for excavation to conserve it. They become “clients” who chose between different producers, in this case the private companies doing archaeological excavation. This view has had disastrous consequences in terms of research, since many excavations carried out through Cultural Resource Management have never been studied or published. It also has ethical and political consequences for our conception of our common past. France offers a good (or sad) example of such an historical evolution, since commercial competition was introduced in archaeology in 2003.

TH2-19 Abstract 02
25 Years of Development-led Archaeology in England: Strengths, Weaknesses, Opportunities and Threats

Author - Trow, Steve, Historic England, Southampton, United Kingdom (Presenting author)
Keywords: Archaeology, Developer-led, Planning

Presentation Preference - Oral


While the issuing of a piece of technical planning guidance may seem like a limited cause for celebration, it did in fact mark a new era in the archaeology of the UK and far beyond. Beforehand “rescue archaeology” was funded by the UK’s central government: thereafter it became the responsibility of developers. It is estimated that, in the intervening period, some 75,000 archaeological investigations have been supported by this system, recording many thousands of archaeological sites that would otherwise have been destroyed by development, without record.

The quarter-century anniversary of this change provides an opportune moment to reflect on the changes that have been wrought in the intervening period. In terms of resources directed to the study of archaeology, the revolution in understanding that has generated and the growth in professionalism in our discipline, the change in policy has been a major success. But it has also created challenges.

This paper will review the achievements of the last 25 years and the balance of benefit and problem that now faces the archaeological profession in England.

TH2-19 Abstract 03
Identifying research aims at the earliest stage of large development plans, first thoughts matter!

Author - Allen, Tim, Historic England, Northampton, United Kingdom (Presenting author)
Keywords: early assessment, major development, research priorities

Presentation Preference - Oral

“Development led” (preventative) archaeology is still regularly contrasted to “research archaeology”. In the UK the former is done largely by commercial organisations (contractors), the latter mainly by universities and community groups with public or charitable funds. This use of language belies a considerable shift in intent over recent years, from both archaeological curators and contractors, and considerable crossover with many contractors undertaking both commercial and not for profit projects.

The development of national and regional research assessments, agenda and strategies (e.g. in England “Regional Research Frameworks”) has sought to ground archaeological practice in an explicitly archaeologically informed basis. For archaeological assessment and mitigation to produce meaningful results it must work iteratively, we need therefore to formulate initial questions from first sight of a project. Archaeological curators are mostly public employees working for local and national governments, agencies and institutions; they have limited time and relationship capital to spend. To influence outcomes, key research questions must be identified early in process (especially concerning absence of knowledge). If an archaeological impact, in particular a setting impact, is to be mitigated or eliminated (or for a planning outcome influenced) both the affected historic asset’s significance and the impact must be understood. Focused research is required to understand these issues, their gravity and what might be done, and it is rarely tenable to raise them late in a project options and design process.

How can archaeological curators and contractors integrate research into large scale development projects and avoid slipping into mechanical processes which simply translate and transform remains to archive? We know what we ‘should do’ but require an understanding of practice and an articulation of the narrative in which our jobs are situated. Without being able to tell to ourselves the story of our role in the archaeological research process we can neither defend our position nor critically assess our success.

Where across complex landscapes with patchy existing information should archaeologists deploy their time and other people’s money and attention? This paper discusses the application of professional judgement and expertise to the identification of key research issues both within and outwith areas of proposed development, at the earliest stages of professional engagement. It draws upon case studies from the English East Midlands (UK). This initial view of a project should not pre-speak an evidence based and iterative approach but is crucial to support a robust Environmental Impact Assessment (EIA) which avoids a reductive and generic approach. Best advice given at the EIA Scoping stage is the foundation of a reasonable and evidenced based approach based upon research. This supports both the public interest in understanding of our past and in allowing the design process to minimise harm. Archaeological assessment and mitigation requires a research based approach from day one, for better or worse we never have as little information or as much potential influence as we do at that point.

TH2-19 Abstract 04
Trends in Scandinavian cultural heritage management in the 2010s

Author - Professor Hakon, Glorstad, University of Oslo, Oslo, Norway (Presenting author)
Keywords: development-led archaeology, Heritage management, Scandinavian models

Presentation Preference - Oral

Strengths, Weaknesses, Opportunities and Threats

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TH2-Abstract 05

Development in preventive archaeology in Slovenia:
a view from the field

Author: MA Novak, Matjaž Arh, d.o.o., Ljubljana, Slovenia (Presenting author)

Keywords: preventive, Slovenia

Presentation Preference - Oral

Slovenia has rather long tradition of archaeological heritage protection, dating from the early 1850s when the Imperial/Royal Central Commission for the Research and Protection of Artistic and Historic Monuments was established in Vienna (at that time Slovenia provinces belonged to the Austrian Empire). Since then, Slovenia has passed through great political changes to become independent country in 1991 with the end of former Yugoslavia. More than 150 years of legislation in heritage protection is an important factor also when considering the development of preventive archaeology today. General institutional framework and doctrine of protection was for decades tied to the Austrian tradition (even after 1918), and Slovenia kept probably the best organized and efficient heritage service in former Yugoslavia with well developed regional network of heritage protection institutes. Legal transformation of old “Yugoslav” system started early in the 1990s, but it was not these changes which are directly associated with the introduction of preventive (rather than rescue) archaeology. In fact, it was great pressure posed by national program of motorways construction in the early 1990s, which considerably challenged the existing (traditional) system of protection and, required answers in terms of preventive strategies. It is in this context in which also the Malta Convention became rather a framework for action (as later - implemented). Here, it is possible to see two major and parallel trends in changing the system of protection: a) positioning archaeology (and its preventive role) in obligatory procedures in spatial planning and b) emergence of private market of archaeological services. For the period 1994-2008 one could speak of a hybrid system of organization of archaeological preventive works with (public) heritage institutes officially directing large scale excavations and surveys (on motorway sites mostly), but hiring private SMEs for the actual job in the field. Existing public institutions simply could not meet the requirements for fast and efficient archaeological preventive research. In 2008, situation changed again, when new Cultural Heritage Act (which introduced the term preventive research) limited the issuers of protection conditions and recommendations (i.e. heritage institutes) to monitoring of archaeological field research. The actual research was undertaken by SMEs or by public instructions which have a right to compete in the market (e.g. museums, academic institutions).

There is also another important issue associated with this act. Prior to 2008, it was the heritage institutes which negotiated the extent and also finances of the research, and have legal powers to force the developers to accept certain measures), while, afterwards, there were possible direct negotiations between developers and preventive research. Such liberalization of negotiations had in many cases negative consequences, especially in the context of recent economic crisis, which in Slovenia affected the most the investments in spatial development and construction, and consequently, also all ‘players’ in preventive archaeology.

TH2-Abstract 06

In search of a common space:
(sharing) the spatial data of preventive archaeology

Author: Nurra, Federico, Sassari, Italy (Presenting author)

Co-authors: Monreu, Anne, INRAP, Paris, France

Keywords: GIS, Preventive archaeology, Webmapping

Presentation Preference - Oral

According to the Article 7 of the “European Convention on the Protection of the Archaeological Heritage”, the parties have to «make or bring up to date surveys, inventories and maps of archaeological sites» and «to take all practical measures to ensure the drafting, following archaeological operations, of a publishable scientific summary record before the necessary comprehensive publication of specialised studies». Furthermore, the Article 8 of the same “Convention” commits the parties «to facilitate the national and international exchange of elements of the archaeological heritage for professional scientific purposes» and «to promote the pooling of information on archaeological research and excavations in progress».

Since the 1990s the Scandinavian countries have in various ways tried to adjust cultural heritage management and development-led archaeology according to the national political thinking on the one hand and Pan-European legislation on the other. Sweden is probably the case in Scandinavia where the most radical, modernist reforms have been implemented. The success of these changes however has been questioned. Still, far-reaching changes are nevertheless introduced. Local, Scandinavian solutions are challenged by organisational models from the larger European countries and by EU legislation. This paper addresses some of these trends and tries to analyse the development of Scandinavian archaeology as a scientific discipline. Theoretical trends underlining the importance of humans may enhance or describe the power of EU directives as an inevitable destiny of Scandinavian archaeology. This thus makes the fact that archaeological engagement with politics on a national level is of major importance for the future of European Archaeology.

TH2-Abstract 07

Preventive archaeology in current Slovakia

Author: Dr. Michalík, Tomas, Cultural Heritage Consulting Ltd. / Slovak Association of Archaeologists, Trencin, Slovakia (Presenting author)

Keywords: archaeological heritage, preventive archaeology, Slovakia

Presentation Preference - Oral

Cultural heritage and its protection is regulated in the number of laws in Slovakia. Basic mentions in the Constitution refer to individual laws, regulating cultural monuments, historic sites, archaeological heritage, museums, galleries, libraries, archives, artistic works or intangible heritage.

From the point of view of archaeology, archaeological heritage, its protection and management, the Act on Protection of Monuments and Historic Sites Nr. 48/2002 Coll. is the most important law, fully regulating the preventive archaeology as a whole. All administrative competences are applied by the Ministry of Culture of the Slovak Republic and its 2 regional branches. They monitor and supervise all activities with potential impact on the archaeological heritage, then they decide on necessity of conducting of research, its conditions and time frame as well as on offences. Their legal position in the Act is very strong, but their personal capacities (usually there are 2 or 3 archaeologists for one region) are low.

Since the last important amendment of the Act in 2014, there is express provision defining and regulating the preventive research. Previously there was no definition of preventive nature of the research, although this kind of research was often assessed as one of the conditions of the research, especially for long-term and spatially large projects.

Preventive archaeology is conducted by licenced organizations in Slovakia; the licence is granted by the Ministry of Culture of the Slovak Republic, taking into consideration opinion of Licence Commission, its advisory body. Currently (February 2016) there are 38 licenced organizations, representing museums, private companies (14), universities (4), civil association (1), town organization (1) and state (2, but important actors – Archaeological Institute of Slovak Academy of Sciences and Monuments Board of the Slovak Republic) in Slovakia. Although museums is the most numerous group, they focus especially on local, less difficult projects. Majority of excavations is conducted by the private sector, what is interesting fact as the first licence for private company was granted only in 2007. Independently on the quantity or quality of archaeological finds, they must be stored in the museum after the finish of the research and elaborating of documentation.

The economic crisis caused substantial consequences in the preventive archaeology sector, but the impact on the practice was probably not so hard than in other countries with different legal situation and research tradition.

TH2-Abstract 08

Preventive archaeology should not be reified!

The case of the history of Swiss motorway archaeology

Author: Jobin, Paul, Institut d’archéologie, Les Bois, Switzerland (Presenting author)

Keywords: History, Preventive Archaeology, Switzerland

Presentation Preference - Oral

The current economic crisis affects preventive archaeology because of the decrease of investments in the civil engineering sector and the public austerity measures. In other cases the functioning of preventive archaeology is simply prejudiced by new public

25 years after the “Malta Convention”, we need to come back to this text and make a decrib of the current situation: is the article 7 just applied? If it is the case, how do the operators of preventive archaeology do in Europe?

The issue underlay is that of the harmonization and the sharing of archaeological data. In that perspective, thinking the harmonization of the spatial data appears to be one of the answers: Archaeology is, above all, a spatial science and it seems thinkable to find a general agreement on the way of representing the spatial data. The issue of production, harmonization and management of archaeological data has become by now central, in relation to the huge diffusion of GIS and Web Mapping.

Basing on this premise and on two practical experiences developed in very different contexts, this paper aims to give a contribution toward the definition of a minimal spatial and archaeological value, useful to the production of archaeological cartography on a European scale.

On the one hand, it will be presented the case study of the formalization of a Spatial Data Catalogue at the French National Institute for Preventive Archaeology (Inrap), on the other hand, the experimentation of the STAN-MODI Dataset (National Archaeological Geographic Information System) at the Department of Architecture, Design and Urbanism of the University of Sassel (DAGU).

The common goal is to realize a spatial data catalogue dedicated to archaeology (preventive and not), and open and shared, useful on one hand for the land development and, on the other hand, for the archaeology research. As, archaeological spatial data then would become the central element towards logic of openness and sharing of historical knowledge, and the historical knowledge becomes the engine of the protection and preservation of places: the first concrete “preventive” action that archaeology should put in place throughout Europe.
management initiatives. Such deleterious effects can also affect countries which are less affected by the economic crisis. Thus we have to develop strategies to maintain or preserve preventive archaeology whilst its establishment has not been considered as accomplished. At the same time, through the crisis of preventive archaeology, new debates appear about the relation between science and heritage.

Finally, we can ask these questions: What do we really have to maintain? What exactly should we accommodate? This presentation proposes an analysis of the historic development of preventive archaeology in Switzerland since the end of the 1950s. The particularity of preventive archaeology in Switzerland is its early development under the impetus of a long-term motorway construction programme which has been in progress for 60 years. Another particular characteristic of preventive archaeology in Switzerland is its framework in the Swiss political system which is a Federal State with significant autonomy within the 26 cantons and half-cantons which make it up. Thus Switzerland can be considered as a "tiny European Union" in the centre of Europe, making it an interesting case for comparative study.

Through this historic analysis we will see that preventive archaeology is the result of a continuous and irregular evolution of different practices and numerous processes. They come from different origins: methodology, science, technique, administration, politics and economics. Consequently, the practice of preventive archaeology has been planned through different organizational and political entities responsible for its application. Therefore, preventive archaeology is an almost cyclical ideal model to be established. On the contrary, preventive archaeology consists of several paradigmatic principles related to heritage preservation. Moreover, these principles can be applied very differently from one political state to another.

In conclusion, if we accept that the current state of preventive archaeology is not an end in itself that need to be protected, but that it constitutes a paradigm of research concerned with the preservation of cultural heritage, we should then recognise that the manner in which preventive archaeology is organised can be regularly re-negotiated within civil society so that it is adapted to the evolution of the research context and, last but not least, to our scientific ambitions.

TH2-19 Abstract 09
The Archaeologies of different times and contexts, as seen from the east part of Western Europe
Author - Dr. Stauble, Harald, Heritage Office Saxony, Germany. Dresden, Germany (Presenting author)
Keywords: after 1990, East Germany, large scale projects
Presentation Preference - Oral
After 1945 many new large infrastructural works were necessary in all parts of Europe but only very few development-led large scale projects were accompanied by appropriate rescue excavations. The major political changes around 1990 had a similar impact on economy resulting in a huge amount of new construction activities, first mainly in the east part of Europe. But from the point of view of the archaelogical management of large scale invasive developmental projects the economic conditions as well as the societal acceptance after the 1990s differed in comparison with post-war Europe. This may partly be an effect of the Valetta Convention from 1992, which was itself a result of many years of convincing work, but it also coincides with the socio-political and economic changes in East Europe, which surely helped the signature and the later ratification of it. Anyhow the early 1990s represent a radical change in preventive archaeology and the management of large developmental scale projects in all Europe. As Germany has more heritage laws than countries it is impossible to speak for all. Some aspicht activities and problems of development-led large scale archaeological projects will be presented from the point of view of Saxony, a former part of East-Germany.

TH2-19 Abstract 10
Enabling Archaeological Research within a Heritage Management Context: A View from the United States
Author - Dr. Helen, Michael, Statistical Research, Inc., Haymarket, United States of America (Presenting author)
Co-author(s) - Casson-Tolvo, Richard, Statistical Research, Inc., Redlands, United States of America
Co-author(s) - Gandara, Domm, Statistical Research, Inc., Redlands, United States of America
Keywords: archaeological research, economic development, preventive archaeology
Presentation Preference - Oral
In the United States, preventive archaeology is governed largely by Section 106 of the National Historic Preservation Act, which requires consideration of historic resources that may be affected by an undertaking involving federal land. Section 110 of the Act further requires federal agencies to identify and manage heritage resources within their jurisdictions. A large and robust heritage resource management industry has developed in the United States around these requirements. The thousands of active archaeologists working as a result of the Act have resulted in tremendous stores of data and some cases of spectacular research findings. Yet, the vast majority of projects are small and disconnected from larger research programs, with their purpose, location, schedule, and level of effort determined by development and other needs, rather than scientific research.

Moreover, project planning and management is often focused on reducing costs within a competitive environment. While many projects are largely compliance-driven, some organizations have managed to develop research-driven approaches that allow for cumulative research to be conducted within a preventive context. In this paper, we discuss our approach at Statistical Research to conducting research within two different regions of the United States – coastal southern California and the desert Panpajas of southern Arizona – by developing regional programs, accumulating data from numerous small projects to achieve appropriate samples and contexts for research, focusing on projects with strong research potential, developing analytical and database tools, cultivating research-oriented staff, and seeking, as a company, to address long-term research goals in the regions we investigate.

TH2-19 Abstract 11
The system of organisation of Czech archaeology
Author - Markí, Jan, Institute of Archaeology of the CAS, Prague, v. v. i., Prague, Czech Republic (Presenting author)
Co-author(s) - Unger, Jiri, Institute of Archaeology of the CAS, Prague, v. v. i., Prague, Czech Republic
Keywords: Czech Republic, Legislation, Preventive Archaeology
Presentation Preference - Oral
The currently effective heritage law in the Czech Republic entered into force already in the year 1987. Even though the law was created in the environment of socialist state, it was designed in a very progressive way. Despite the fact that the law was not significantly revised since it had become effective it still fulfils the majority of obligations that the Czech Republic undertook to do by joining the Valetta convention in 2000.

However, lawmakers in the year 1987 cannot envision the fundamental political as well as social transformations that occurred in the Czech Republic two years later, in the year 1989. The changeover to a market economy as well as significant increase in building activities brought much higher demands on conducting rescue archaeological field works. This process has resulted, among other things, in increase in number of applications for issuing new licences entitling to conduct the archaeological field work. Besides museums and universities, private companies appeared. So far, altogether 110 public as well as private companies possess the licence to conduct the archaeological research. Implementation of the principle the "polluter pays" has caused that the licenced organizations are using the rescue archaeological field work as one of their major financial sources.

The Institute of Archaeology of the Czech Republic holds in organization of the Czech archaeology a privileged position. The Institute is the only organization entitled to conduct archaeological field work directly by the law. Furthermore, it has the right to significantly influence the issuing of a new licence to conduct archaeological research (the power of veto), collect information regarding the ongoing archaeological field works, archive Excavation reports and, to a certain degree, to control their quality. However, the effective law does not stipulate any evident standards of archaeological research and, thus, its quality varies very significantly in the Czech Republic.

As far as law-making process is concerned, unclear specification of regulations, rights as well as obligations on the side of not only licenced organizations but also developers, property owners and state administration represents fundamental problems of the Czech archaeology. This state of affairs can be solved only by passing of a new law.

TH2-19 Abstract 12
Rethinking Preventive Archaeology: classification of the land as a starting point
Author - Querol, A., Spain, Complutense University of Madrid, Madrid, Spain
Co-author(s) - Castillo, A., Complutense University of Madrid, Madrid, Spain (Presenting author)
Keywords: Interpretation, Land management, Mediation
Presentation Preference - Oral
Around 30 years ago we started researching the topic of archaeological heritage management in Spain and the necessity to adopt preventive measures concerning archaeological studies in the context of civil works. We used the adjective "preventive" for the archaeological research. In this context, and we developed a specific model (published in 2007) to establish Reserve Zones ("untouchables") and Caution Assessment Plan and Environmental Impact Assessment for projects to establish Reserve Zones ("untouchables") and Caution Areas (for interim protection of construction projects) in the territorial planning of Spanish territories. The implementation of this model will not only achieve a decrease in the number of archaeological rescue or emergency interventions, but will also allow to design archaeological research based on its knowledge, without it being the decision of the public or private civil work.
Today, the challenge is to implement the model more (there are some examples in Spain, but very few), and to improve it to include other kinds of measures such as mediation techniques in front of social conflicts with interventions or adequate interpretation systems for this type of archaeological heritage that usually is more difficult to spread than other archeologies.

TH2-19 Abstract 13
Preventive archaeology from 2010 onwards in Hungary – legal background and the reality

Author - Zsókó-Ernyey, Katalin, Government Office of Budapest Capital, Budapest, Hungary (Presenting author)
Co-authors - Knölker, Zsuzsa, Gyula Forster National Heritage and Asset Management Centre, Budapest, Hungary
Keywords: development-led excavations, legal system, reforms
Presentation Preference - Oral

Hungary has signed the Malta Convention among the first countries (1992), built the Convention’s main principles already into the first cultural heritage law (1997. CXL) issued after the political turn (1989), nonetheless the Convention itself just later (2000) became part of the national legislation. Preventive archaeology – in modern terms – appeared around the 1990s and quickly became the dominant way of excavating, the number of development-led excavations was the highest around 2008/2010. The history of this “evolution” from a few aspects was already discussed by archaeologists mainly in foreign publications, conferences (e.g. EPAC, EAC volumes, ACE project) – unfortunately such a debate is still missing on national level, the characteristic elements of this process, the special interest of the different actors have not yet been analysed. In this paper we focus on the period from about 2010 till now, the period that is characterised by a radical reorganisation of heritage management under the aegis of the overall government-reform, the shutdown of the INFRAP-like field service (established in 2007). The recent changes (including the accreditation of excavation institutions and firms) foster the building up a free-market like system in case of development-led large scale excavations: legal “reforms” were introduced in favour of better predictable excavations and investments and for the “benefit” of the citizen. We try to confront theory and practice to outline the problems that should be resolved.

TH2-19 Abstract 14
French preventive archaeology in a European context

Author - Salas Rossenbach, Kai, French national institute for preventive archaeological research, Paris, France (Presenting author)
Co-authors - Pion, Patrick, French national institute for preventive archaeological research, Paris, France
Keywords: development-led, European, preventive
Presentation Preference - Oral

Since 2001 French state decided to create a national institute to lead preventive archaeology. With more than ten years of exercise, through crisis and political changes, the Institute evolved and learned from these changes. Looking across Europe, French model still looks singular both from is accomplishments and failures. This presentation, comparing European situations with the French one, consists of a critical analysis of the French example. From this base, it proposes some common lines to be discussed at a European level. Each of these lines seem to take us to a central starting point question: why is preventive archaeology done in our countries and how can we collectively answer this question?

TH2-19 Abstract 15
Is Preventive Archaeology viable in time of crisis?

The Greek experience

Author - Kotsakis, Konstantinos, Aristotle University Thessaloniki, Thessaloniki, Greece (Presenting author)
Presentation Preference - Oral

The paper presents the state of preventive archaeology in Greece within the context of the most serious economic and social crisis since the end of the Civil War in 1949. Archaeology in Greece is traditionally and legally closely involved in the State apparatus, a reality which is enhanced by the corporatism of the state archeologists. However, the urgency of the economic crisis hitting Greece hard since 2009, and the recently added huge refugee crisis is putting a dangerous strain on archaeology. Is state archaeology going to survive the crisis?

TH2-19 Abstract 16
Is preventive archaeology compatible with scientific research?

Author - Dr. Depaepe, Pascal, Inrap, Amiens, France (Presenting author)
Keywords: Economic Crisis, Preventive archaeology, Scientific Research
Presentation Preference - Oral

Preventive archaeology is now, in Europe, certainly the main source of archaeological data, about 90% in some countries, and each European country has a more or less strong legislation about archaeology and cultural heritage. A common point of these laws is the possibility of a commercial archaeology beside an academic one. Therefore many private companies have emerged especially since 2000. But preventive archaeology has been strongly affected by the global economic crisis since 2008.

This paper will examine if preventive archaeology is efficient in a scientific point of view, not only in a cultural heritage point of view, in Western Europe and especially in France.

TH2-19 Abstract 17
Birth and infant death of preventive archaeology in Italy

Author - Dr. Guermandi, Maria Pia, Istituto Beni Culturali, Bologna, Italy (Presenting author)
Keywords: archaeological heritage safeguarding, Preventive archaeology, Public administration reform
Presentation Preference - Oral

The consequences of the crisis - far from being outdated - led to a profound rethinking of the methodological, social and institutional framework in which archaeological discipline has operated in recent years on a European level. For a large majority of EU countries, this framework had its political and legislative basis in the Malta Convention of 1992.

A profound change has occurred in the 24 years since the Convention, particularly in the past 8-10 years, which have witnessed a rapid change in the framework of reference from multiple points of view.

The philosophical-political context has changed: with the beginning of the new millennium, the policy documents concerning cultural heritage, on both a European and international level, have made a radical shift away from the previous approach focused on objects, sites monuments towards a conception of heritage founded upon the demands, expectations, interests and needs of the populations.

Almost simultaneously, a gradual, but extensive redefinition of the spaces of public intervention in all sectors has taken place throughout Europe. This has made it necessary to redesign the institutional framework of archaeological practices in many EU countries.

The situation in Italy is at the same time specific and exemplary: the grotesque delay in the ratification of the Malta Convention, which took place only recently - May 2016 – reflects how far behind legislation is in general when it comes to archaeology. There is no specific legislation and archaeological practices are governed by directives that are highly ambiguous, when not downright conspiratorial, archaic, manifestly insufficient and ridiculously and pointlessly restrictive (e.g. the limitation of prior verification procedures to public works only, the only case in Europe). The drafts of the guidelines on preventive archaeology, which we have been waiting for since 2006, do not appear likely to fulfill the expectations of an entire sector that has been struggling for years amidst a deep economic crisis affecting all the players involved: from developers to professional archaeologists, from universities to the Ministry of Cultural Heritage.

In this situation the Italian Ministry of Cultural Heritage undertook since 2014 a reform of its internal structure. A new step of which has been undertaken in January 2016. This new Decree radically changes the structure of the protection and conservation Offices. Archaeological Superintendencies lose their autonomy and come unified with Landscape and Arts Superintendencies.

As regards the preventive archaeology, the synergy between the Ministry reform and the revision of the Procurement Code could mean the totally deregulation of this sector with a devastating impact on landscape and archaeological heritage safeguarding.

Despite the different national contexts, these are phenomena of a transnational nature. They must thus be addressed on a European level; at least from a cultural and political perspective, if we are to have a hope not only of grasping the underlying reasons for the changes that have occurred and are still underway, but also of coming up with some ideas for orienting the evolution of future processes in a direction favourable (or less unfavorable) to our architectural heritage.

TH2-19 Abstract 18
How Scientifically based Archaeology can assist Commercial Archaeological units to save money

Author - Forestall, Colin, Berkshire Archaeological Society, Wokingham, United Kingdom (Presenting author)
Keywords: Commercial, Perception, Scientific
Presentation Preference - Oral
Generally, commercial archaeological units in the United Kingdom perceive field archaeology in general, and osteological, zoological, ceramic and of course geophysical analysis as tried and trusted good things. The basic dig it collect what is there as finds, wash the finds and have experts look at them and give dates and functions for the various layers and a real interpretation can be applied satisfactorily to all.

None of this of course relies on good scientific techniques, it is comparison archaeology and relies on experience and gained know how and personal interpretation. Modern archaeology has made great strides in adopting a more vigorous approach to the process of interpretation. Thus Specialists and technician capable of performing Geochemical, X-ray, Geological, Landscape and Environmental analysis are viewed with suspicion and are perceived as being expensive, confusing in the ambiguity, and perceived as costly and not commercially justifiable.

Commercial units want cheap labour, trained in a few cost effective techniques that lead to lower costs and higher profits based on archaeological methodology that would not have seemed out of place in the 1960’s. This paper aims with the aid of a few case studies to show that this perspective is incorrect and in fact good and thoughtful application of scientific archaeology can not only establish where and what archaeology is on the site with minimal intervention, but in combination with geophysical analysis can establish the best and most cost effective way to investigate and evaluate it. This is not to say the numerous 30m or 50m x 2 m trenches across a site on a consultant whim doesn’t work but I will argue that a targeted environmental and scientific preliminary investigation will lead to a more cost effective and beneficial method of examining our historic environment to the benefit of all.

Preventive archaeology in Austria

Author - Mag. Dr. Kriemann, Martin, Bundesdenkmalamt, Krems, Austria
Co-author(s) - Dr. Steigerberger, Eva, Bundesdenkmalamt, Krems, Austria (Presenting author)
Presentation Preference - Oral

The present article deals with the structural changes that have taken place within Austria’s archaeological heritage management in the last few years. Issues such as the current state of human resources and general tasks of the Federal Monuments Office’s Archaeological Department are covered. Special emphasis is placed on the rise of commercial archaeology as well as on the application of scientific archaeology. The “Guidelines for Archaeological Measures” introduced in 2010 have been in force for nearly two years. Based on the fact that the rise of osteological and environmental analysis are viewed with suspicion and are perceived as being expensive, confusing in the ambiguity, and perceived as costly and not commercially justifiable, the paper examines the implications of the “Guidelines for Archaeological Measures”.

Destination management of heritage sites and towns in Croatia

Author - MA Mihelcić, Sanjin, Archaeological Museum in Zagreb, Zagreb, Croatia (Presenting author)
Co-author(s) - Kodmić, Darko, Archaeological Museum of Istria, Pula, Croatia
Keywords: Archaeological tourism, Destination management, heritage sites
Presentation Preference - Oral

The paper focuses on the present state regarding integrated destination management of heritage sites and towns in Croatia, reviewing a number of recent attempts at broad-scale participative approach integrating needs, wishes and particularities of different stakeholders. In certain cases, the general collaborative framework introduced by a few key stakeholders in the circle including archaeologists, conservators, tourism specialists, local administrative units, civic sector and local community proved an excellent guiding light toward a common goal of integrated management aimed at sustainable development of archaeological sites as dynamic factors in the tourism business at local, regional and national levels. In certain other cases, in which these different voices were not fully heard and particular interests took precedence, archaeological tourism as a practice often left much to be desired. The authors, directors of two major Croatian archaeological museums (in Zagreb and Pula respectively) draw on their experience in the project management of heritage attractions, with a view to contributing to the discussion towards creating European guidelines for archaeological tourism, as proposed by the session organizers.

Bridging the gap: archaeology in tourism at the Archaeological park Emona (Ljubljana, Slovenia)

Author - Zupanec, Bernardo, Museum and Galleries of Ljubljana, Ljubljana, Slovenia (Presenting author)
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Keywords: archaeological heritage management, archaeological park management, archaeology, tourism
Presentation Preference - Oral

Archaeological Park Emona (Ljubljana, Slovenia) exhibits remains and presentations of a Roman Colonia Iulia Emona. The park consists of several locations in the center of modern Ljubljana, the Slovenian capital. The park developed gradually from 1930-ties on. As a product of specific context, tied to the idea of Antiquity and its heritage as civilizing and inherently understandable, and to Roman archaeology as elite oriented, it was less interesting for the general public, and gradually became obsolete and unknown even to the inhabitants of Ljubljana.

During the project of renovation and revitalisation of the Archaeological park Emona in 2011-2012, carried out by the Museum and Galleries of Ljubljana, several key changes and improvements have been made. The primary goal of the project was to include local communities and other civic partners to discuss issues on the management of these projects and to present good practice examples of such multidisciplinary projects.

I SEE SOMETHING THAT YOU CAN’T SEE. MULTIDISCIPLINARY APPROACHES IN ARCHAEOLOGICAL TOURISM

Thursday, 1 September 2016, 09:00-13:00
Faculty of Philosophy, Room 107
Author - Williams, Annemarie, Bern, Switzerland (Presenting author)
Co-author(s) - Jilek, Sonja, Institute for History, Vienna University, Vienna, Austria
Co-author(s) - Dunning Thierstein, Cynthia, ArchaeoConcept, Biel, Switzerland
Keywords: management, multidisciplinary, tourism
Presentation Preference - Regular session

During last year’s EAA conference the Working Party (WP) Integrating the Management of Archaeological Heritage and Tourism was founded. The outcome of this Working Party would be creating European guidelines for archaeological tourism for Europe and beyond, maintaining and sustaining an information platform and professional network. Like the WP this session is aimed at creating a multidisciplinary dialogue and raise awareness of the benefits and possible conflicts of archaeologists and professionals from other relevant disciplines working together in archaeological tourism projects turning them into a meaningful experience for the general public. We welcome participation and input from all stakeholders, including archaeologists, tourism specialists, local communities and other civic partners to discuss issues on the management of these projects and to present good practice examples of such multidisciplinary projects.

MULTIDISCIPLINARY APPROACHES IN ARCHAEOLOGICAL TOURISM

Author - Willems, Annemarie, Bern, Switzerland (Presenting author)
Co-author(s) - Jilek, Sonja, Institute for History, Vienna University, Vienna, Austria
Co-author(s) - Dunning Thierstein, Cynthia, ArchaeoConcept, Biel, Switzerland
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Presentation Preference - Oral

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the heritage of Emôna into the life of modern Ljubljana, and to enable this, the renovation of infrastructure in the park was carried out, together with interpretative aids and public programmes.

As tourists were one of the weakest groups of our visitors, we designed a marketing plan with them in mind, and started to collaborate with the local tourist board, Tourism Ljubljana, and designed a tourist programme together. We also included local entrepreneurs and artists in some other programmes and exhibitions. Owing to these changes and endeavours, we had a 25% growth in foreign visitors to the Park. However, we did experience tensions and misunderstandings due to differences in understanding. The location and the landscape is the raison d’être of the project - and locals as well as tourists are given the opportunity to enjoy the project.

The project tries to validate the utility of an official method to analyze sustainable tourism in towns. The work is coordinated by enterprise in urban regeneration and participatory processes who have tested this methodology in two villages with a rich cultural heritage. Cazaux (Andalusia) and Sigüenza (Castilla La Mancha).

As part of a strategy of collaboration between the University Madrid and an enterprise to introduce innovation and research, we have proposed and introduced some novelties to the official methodology. Specifically, we are trying to improve the role of cultural heritage in order to measure sustainability of these two touristic destinations. Unfortunately, in both the European and Spanish methodology archaeology or archaeological sites are highly overlooked. In contrast to this situation, the Spanish cases of study here considered as other European destinations attract large numbers of tourists due to their past, tangible and intangible Intangible Heritage. The conclusion reveals a negative perspective for archaeology values, however, from a proactive point of view, we have started to work with this methodology and to introduce new parameters that we hope will be considered in future implementations of this methodology. At the same time, this is an opportunity to show a touristic tool in experimental use in many European countries and the attempt to adapt it to archaeological sites or archaeological management in a project where tourism is an objective.

The Roman frontier fort of Zwammerdam is one of the sites along the Lower German limes, along the river Rhine in the west of the Netherlands. Beside the military fort six Roman shipwrecks are discovered. The ships represent the typical character of the Lower German limes as a river frontier, built in wetland, serving as a main transport route connecting the Germanic and Gallic hinterland. This project tries to validate the utility of an official method to analyze sustainable tourism in towns. The work is coordinated by enterprise in urban regeneration and participatory processes who have tested this methodology in two villages with a rich cultural heritage. Cazaux (Andalusia) and Sigüenza (Castilla La Mancha).

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The aims of both the limes network and Ipse de Bruggen resulted in a joint venture on the Hooge Buurch, with the investment of a first-class limes visitor center, partly run by people with mental and physical disabilities. Limes Visitor’s Centre NEDERLAND opened its doors at April 15th 2016.

From the ground up: Experiencing Romania through excavations at Halmyris in the Danube Delta

Author - Baranescu, Emily, Durham University, Durham, United Kingdom (Presenting author)

Keywords: Authenticity, Heritage, Volunteer

Presentation Preference: Oral

The project is called eScape and can be seen as a concept that is all about combining art, archaeology, past and present. eScape brings out art and cultural heritage “on location”, away from the walls of the museum, creating a phenomenological space where nature, art and cultural heritage meet and communicate with one another, giving visitors unique and unexpected experiences.

For after forty years, the discovery of the Roman barges has led to the realisation of a first-class limes visitor center, partly run by people with mental and physical disabilities. Limes Visitor’s Centre NEDERLAND opened its doors at April 15th 2016.

TH2-20 Abstract 04

Crossing borders along the Dutch Limes - How the famous Roman barges of Zwammerdam support people with multiple disabilities

Author - Hazenberg, Tom, Hazenberg Archeologie, the Netherlands (Presenting author)

Keywords: Limes, visitor center, unique collaboration, Tourism

Presentation Preference: Oral

The Roman frontier fort of Zwammerdam is one of the sites along the Lower German limes, along the river Rhine in the west of the Netherlands. Beside the military fort six Roman shipwrecks are discovered. The ships represent the typical character of the Lower German limes as a river frontier, built in wetland, serving as a main transport route connecting the Germanic and Gallic hinterland with the North Sea basin. For this reason the ships play a principal role in the tourist-oriented development of the Lower German limes connected to the UNESCO nomination programme.

The ships were found on the estate Hooge Buurch, now owned by Ipse de Bruggen, an institute for people with multiple disabilities. Due to new medical insights and growing individualism, ideas have now changed regarding the relationship between clients and the rest of society. Cuts in health care also influence local changes and the treatments available. This and other changes in tourism demand and solutions employed make a good starting point for a debate, and a very useful experience for planning the development of Archaeological Park Emôna and similar enterprises in the future.

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TH2-20 Abstract 05

Looking for archaeology in an official tourism sustainable method.

Examples from two Spanish villages

Author - Castillo, Alicia, Complutense University of Madrid, Madrid, Spain (Presenting author)

Co-author(s): Dominguez, Marta, Complutense University of Madrid, Madrid, Spain

Co-author(s): Martín, Juan, Complutense University of Madrid, Madrid, Spain

Co-author(s): Arranz, Jorge, Paisaje Transversal, Madrid, Spain

Co-author(s): Acero, Guillermo, Paisaje Transversal, Madrid, Spain

Keywords: cultural heritage, sustainable tourism, ETIS, university-enterprise collaborations

Presentation Preference: Oral

One of the most important topics to analyze the relationship between Archaeology and tourism is the study of its role under the parameters of touristic agents. In this context, our research team has had the opportunity to collaborate with an enterprise in an experimental project to the Spanish Ministry of Industry. The methodology is based on other European systems, especially The European tourism indicator system for sustainable destinations (ETIS), which is being experimentally tested in several towns along all Europe.

This project tries to validate the utility of an official method to analyze sustainable tourism in towns. The work is coordinated by enterprise in urban regeneration and participatory processes who have tested this methodology in two villages with a rich cultural heritage. Cazaux (Andalusia) and Sigüenza (Castilla La Mancha).

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TH2-20 Abstract 06

Unexpected experiences

Author - Hytt-Madsen, Lene, Museum skanderborg, Skanderborg, Denmark (Presenting author)

Co-author(s): Dissing, Nina Bangsbo, Municipality of Skanderborg, Skanderborg, Denmark

Co-author(s): Purup, Marianne, Visit Skanderborg, Ry, Denmark

Keywords: Art, Co-creation, Cultural Tourism

Presentation Preference: Oral

Creating meaningful experiences for the general public should be the primary aim of cultural tourism. When securing quality in these meaningful experiences it is crucial to start cooperating with the specialists so that this side is also in cooperated in the project making.

Actually we choose to take the challenge one step further by creating a project that combines archaeology, art and tourism on equal terms.

The project is called eScape and can be seen as a concept that is all about combining art, archaeology, past and present. Creating and communicating art on sites with strong archaeological evidence in combination with the scientific archaeological excavations.

The location and the landscape is the raison d’être of the project - and locals as well as tourists are given the opportunity to experience landscape storytelling combined with world history interpreted by modern art.

eScape brings out art and cultural heritage “on location”, away from the walls of the museum, creating a phenomenological space where nature, art and cultural heritage meet and communicate with one another, giving visitors unique and unexpected experiences.
A journey through time: sensory tourism in the context of archaeological museums in Poland

Author - Dr. Pawleta, Michał, Adam Mickiewicz University, Poznań, Poland (Presenting author)
Keywords - archaeological museums, Poland, sensor tourism

TH2-20 Abstract 07

Whereas previous studies in tourism promoted vision, current research claims a holistic approach to sight, hearing, smell, taste and touch in order to develop effective communication with visitors and create conditions to enhance tourist experiences. Consequently, sensory aspects of tourism have recently been in focus as an important dimension in the process of facilitating positive tourist experiences. Among others, also the archaeological museums embrace resources rich in multi-sensory stimuli that are more often utilized in the planning and marketing of appealing tourist experiences.

This paper aims to present the “sensory site” of archaeological museums in Poland. The key axis of considerations is choosing to which degree they respond to the sensory tourism tendencies.

The trends discussed are illustrated by selected examples. I am referring here to the long-established archaeological museums in Poland as well as newly-open exhibitions as “Following the traces of the European Identity of Oraców”, as well as innovative trends such as those realised in the “World of the Slavs and Vikings” or “The Slav Myth”. It is not a systematic analysis, but shows certain noticeable trends in archaeology museums: in the presentation of the artefacts, in educational projects, including the introduction of reconstructions, reenactments, museum lessons, etc. It also addresses the issue of a modern technology offering a visitor a different perspective on the confrontation with archaeology and monuments.

It also rises some crucial questions, for example, how contemporary archaeological museums support the multisensory nature of tourist experiences? If the measures undertaken are to make the exhibited artefacts more attractive, or whether they are competing with it? Are the new ways of exhibiting and presenting knowledge about the past drawing society closer, encouraging aesthetic experiences with relics of the past, the discovery of ancestors and increasing scientific knowledge? Or do they turn attention from the items on display? Finally, what is the real purpose of the “sensory” development of contemporary museums?

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Museums in Central Asia: The Role of Cultural Institutions in disseminating Information

Author - Dr. Jarosz, Katarzyna, University of Logistics, Wroclaw, Poland (Presenting author)
Keywords - digital divide, museum, tourism

TH2-20 Abstract 08

The countries of Central Asia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, or Uzbekistan have great tourist potential both for foreign visitors and companies who might be interested in investing in tourism. A key factor making the place so attractive is the beauty of nature, landscapes, cultural, archaeological and heritage unique attractions, hospitality of people, arts and crafts of the region. It is easy to understand why this region can be considered as a unique and very attractive tourist destination. However, one common denominator in all the studies is that all these countries, to a different degree, lack proper infrastructure and have not developed proper mechanisms to attract more potential visitors and tourists.

One of the most often quoted sentences in the literature on the tourism industry is that information is the lifeblood of tourism. It has been clearly demonstrated in numerous studies that museums have direct impact on a country’s economy. The aim of this paper is to present the potential role of a historical route as a language learning and culture acquisition tool. The Route of the Bosphorus Bridges relates to Wellington’s retreat in 1812 from Burgos to Portugal after the month long siege of Burgos had proved to be too tough a target. While retreating, and to avoid being trapped by the French army, Wellington ordered that several bridges on the Canton, Pauzega, Duero and Tormes rivers were blown. Through “the worst scrape I was ever in”, as Wellington put it, the allied army gained a moral dominance over the French not renouncing to it ever again.

We identify, categorize and analyze the route and its highlights in order to create materials which may serve as a means to gain a deeper sense of the Spanish culture and heritage. These materials will be used to foster this tourist route which may be useful to students interested in learning Spanish L2 while experiencing the country’s historical heritage.

The analysis of the museography and other landmarks of the route will demonstrate how fascinating the itinerary is as a means to relive the historic epic of the Napoleonic Europe both for the foreign contemporary traveler, often learned and with great interest in historical events, and also for the general public, willing to know more about this period of our history, the popular festivals, the historical recreations, etc.

As part of an ongoing project devoted to the planning, design and digitalization of materials called Touring the Battlefield: The Peninsular War in Castilla y Leon, our didactic proposal covers language use, cultural knowledge and intercultural competence, while contributing to the valorization and management of our region cultural landscapes.

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Exploring the touristic image on World Heritage Archaeological Sites of Europe through the Web

Author - Babii, Bogdan, Móstoles, Spain (Presenting author)
Keywords - Perception and Interpretation, Tourism, World Heritage Site

TH2-20 Abstract 10

With the context of collaboration of the cultural heritage management research group of the Complutense University of Madrid and according to the interest awoken by the Archaeology and Tourism Working Party, we present this poster with the intention of making a first approach of how the touristic agencies operating on the Web treat the archaelogical visit. Following the UNESCO criteria regarding the world’s regional division and the reasons for declaration, we selected the settlements recognized for their cultural landscape, Historical routes, Language learning.
Managing the archaeological heritage

TH2-20 Abstract 11
The research-presentation multidisciplinary approach - Symbiosis in Starigrad, Croatia

Author: Domiter, Ozren, Archaeological museum in Zagreb, Zagreb, Croatia (Presenting author)
Co-author(s): Radman- Livaja, Ivan, Archaeological museum in Zagreb, Zagreb, Croatia

Keywords: inter-institutional-multidisciplinary cooperation, needs of local community and stakeholders, research-presentation concept

Presentation Preference - Poster

Bearing in mind the positive results of the cooperation between the Starigrad Tourist Board, the Starigrad primary school, the Institute of Archaeology and the Archaeological museum in Zagreb (e.g. publications of research results, a series of lectures for students, the creation of interpretative boards and a preliminary presentation plan, presentational activities, the active involvement of the local community), and considering plans for future spatial research and thereby connected presentation of zones round the site of the St. Trojica hill fort, the Museum succeeded in its intention to raise awareness of the local population and the governing bodies about the rich natural and cultural heritage of the area, and to actively include the community into the forming of its presentation through education activities. In the long run, the Museum wishes to include all potential stakeholders - cultural and natural heritage-related institutions (Paljenica Nature Park, Velabli Nature Park, Archaeological museum in Zadar), as equal partners, in order to act in synergy to enrich the existing tourist offer of the Starigrad Municipality, to achieve their own Missions, and, through a contemporary and innovative approach, to enable for the creation of a kind of museum in the open which would, inside its invisible walls, inseparably connect and communicate the rich natural and cultural heritage of the entire Starigrad area in an interesting and inspiring way.

The Museum, as the initiator of the idea of this sort of research-presentation multidisciplinary symbiosis, would use its research work not only as a key step in the collecting and interpretation of scientifically-based data, but also as an exceptional presentational potential, enabling all interested persons to see the site, witness archaeological excavations via the best interactive presentation method - personal experience.

Even when local community and stakeholders are not aware or, for any reason, able to communicate their needs, the Museum constantly strives to offer a broad frame of possibilities, ideas and cooperation models in which such needs of local community and local stakeholders are detected, recognized and outspoken and, after all, always treated with special attention and respect, and, whenever possible, fitted in a whole for the benefit of all included participants.

This synergistic, general-heritage and interinstitutional approach includes all three functions of heritage-related institutions (research, preservation and communication) for the overall benefit of the local community and society as a whole.

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TH2-21 Abstract 01
Sustainable Heritage and archaeology: a blessing or a curse?

Author: Dr. Andersson, Anna-Carin, University of Gothenburg, Gothenburg, Sweden (Presenting author)

Keywords: Archaeology, Heritage, sustainability

Presentation Preference - Oral

This aim of this short and reflexive presentation is to encourage to even more reflexivity. The paper has been encouraged after a vivid and constructive debate on the academia.edu site initiated by the session organisers. Many people within archaeology and heritage management have commented and given their experiential point of views on the matter of Sustainability. What is "Sustainable Archaeology"? Or even a Sustainable Heritage? Is it really a matter of Heritage? Who's Heritage? Or is it a matter of how we can protect and ensure the survival of the discipline of archaeology for future generations?

In various societal circumstances it is possible to come across the concept of Sustainability: "sustainable education", "sustainable child-care", "sustainable society", "sustainable development", etc. Who are the stakeholders that have initiated the hankering or demands of Sustainable archaeology in the first place? What is the origin of this concept? In this paper it is argued that it is an awkward "phrase" which occupies valuable time, blurs, which prevents the heritage management sector from more important societal issues to discuss. For instance, how do we make Heritage and Archaeology a more interesting concern for people in contemporary societies?

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TH2-21 Abstract 02
The first step on the way to sustainability: understanding the structure of land development

Author: Vannmoerekerke, Jan, Ministry of culture, Chalons-en-Champagne, France (Presenting author)

Keywords: Archaeology and Heritage on the Way to Sustainability, development, earthworks, sustainability

Presentation Preference - Oral
For most archaeologists, archaeological heritage management concerns major construction works, such as motor- and railways, airports, etc. This idea, implicitly present in the Valletta Convention, doesn't make sense anymore today. Big public works are getting rarer and rarer in Northwestern Europe. New data on all types of development, which have a destructive impact on archaeological sites, are getting available and demonstrate that these big public works represent less than 10% of archaeological destruction. In France, an inventory of all destructive works was made. It appeared that housing and agricultural works are the main factors of destruction, far ahead industrial and linear (roads, etc.) works which are far less important. A lot of new types of land development, often linked with the green economy, are also important. Preventive archeology of this mass of small scale earthworks is something wholly different from archeology of large infrastructure works. It should be adapted at all levels, from the theoretical to the technical and administrative level. In the long term, its public impact and sustainability are however much better.

TH2-21 Abstract 03

An Archaeology of Stains. Sustainability and Responsibility in Facing Painful Heritage

Author: Zalewska, Anna, Institute of Archaeology and Ethnology of Polish Academy of Sciences, Warsaw, Poland (Presenting author)

Keywords: archaeology of recent past, painful heritage, Stains Black and White

Presentation Preference - Oral

While thinking about the archeology’s capacity to endure at the time when it is facing as well old as new constraints together with requirements and pressure to ‘perform’ and to ‘be socially useful’, two aspects demand discussion and comparative studies: the actual participation and efficiency of archaeologists in ‘cultural heritage management’ and labeling (1) impact of archeology on that, what is perceived as ‘the Heritage’ by the local and global communities. Unfortunately, we are not the perfect one in taking into account social preferences. At least in Eastern Europe.

However, starting from what I have available, and treating symptoms as informative, I assume that it is worth to focus archaeological attention on the material remains of the XX Century. Some of them already became or soon will become the subjects of the archeological studies. They are the creations of both the righteous (fair, legitimate etc.) and filthy (vile, gory etc.) events. In general, the first category can be seen as recognised and widely described historically, while the second is still shrouded in understatements and nesciences. It also induces growing public interest and can be described metaphorically as the ‘stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is etc.) events. In general, the first category can be seen as recognised and widely described historically, while the second is still shrouded in understatements and nesciences. It also induces growing public interest and can be described metaphorically as the ‘stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is

In my presentation I will expose that dimension of the concept of sustainability of archeology, on which as the crucial can be seen the potential of archeology in exploiting those ‘stains’ – within the recent past history. In other words I will try to present the merits - of archaeologists’ ability to deal reflectively and responsibly with the material dimensions of ‘stains’ as with the worth of ‘stains’. That which is unknown and / or unclear as often intentionally hidden can be described as the ‘white stains’. That which is

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Additionally, in relations to the current calls in the human sciences for a “return to things”, “evidential turn”, “forensic turn”, seem equally important as the still growing public needs for ‘a visible, visitable, tangible, touchable pasts’ I will elaborate the reasons for which the Gadamerian question on the ways in which knowledge and its effects are affiliate remains central. I will also discuss why material remains, especially those excluded and those difficult to be grasped in words, situate archeology in position of the discipline necessary or/ and handy for the freedom from or acquittance with the enduring ‘stains’. I will also discuss why material remains, especially those excluded and those difficult to be grasped in words, situate archeology in position of the discipline necessary or/ and handy for the freedom from or acquittance with the enduring ‘stains’. 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Managing the archaeological heritage

328

Managing the archaeological heritage and sustainable development in Laconia, Greece

Inhabitants in the area and to make archaeology a part of the local society for a sustainable future.

Company and others. An aim of the project is to make a place for storytelling and pedagogical activities for the schools and the youngsters from this area that have joined ISIS. There is therefore a great need of supportive and positive actions and perspectives.

According to The Swedish Heritage Conservation Act heritage belongs to everyone, and considering sustainability in this area. A discussion of the main problems faced by the local communities, the endemic causes of exclusion and underdevelopment.

The main argument presented in this paper is that archaeology can contribute to sustainable local development, but it should do so as part of a theoretically informed, socially engaged and carefully researched multidisciplinary project which combines archaeology, history, ethnography and social theory. This can be achieved if we investigate the social and political conditions within which attitudes to the past have been formed and within which notions of local, national, or world heritage have defined.

If we engage with social problems in the present, and if we contribute to the formulation of a vision for responsible growth in the future, by means of a dialogue with the local communities and the policy makers responsible for the study and management of the archaeological heritage in the area. The discussion will focus on Laconia, a region of southern Greece. The argument proceeds in four stages.

The exploration of local perceptions of the past by means of a programme of archaeological (visual) ethnography. Special attention is given to educational programmes for school children presented in the local museums and archaeological sites, as they contribute to the formation of local perceptions of archaeology and archaeologists.

A discussion of the main problems faced by the local communities, the endemic causes of exclusion and underdevelopment as well as the further deterioration during the current financial and political crisis.

The formulation of a vision for sustainable growth and for alternative forms of tourism (e.g. agrotourism, ecological tourism, cultural tourism, etc.), and the need for the creation of collaborative structures which can unleash local creative potential and act as a platform for the exchange of ideas.

To summarize, it will be argued that a sustainable future for the archaeological heritage is only possible if we understand the historical conditions of its formation, but also explore its potential to mobilize new forms of action and formulate new readings of the past.

The past in the future: archaeology, heritage and sustainable development in Laconia, Greece

Author - Prof. Voutsaki, Sofia, University of Groningen, Groningen, Netherlands (Presenting author)

Keywords: public archaeology, sustainable development, theory

Presentation Preference - Oral

In the last three decades, the realization that archaeologists have to engage in dialogue with the local communities is growing, and new fields such as Public Archaeology or Community Archaeology are establishing themselves as separate sub-fields of practice and theoretical reflection. At the same time, the current financial crisis (especially felt in southern Europe, but also in the Humanities and the Arts sector) forces us to find alternative and responsible ways to boost local development.

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The discussion of shifting attitudes to the past both in relation to hegemonic discourse as shaped by classical scholarship, national education and nationalist ideology, but also in relation to folk culture (local legends and fairy tales) and recent influences such as film, comics, the souvenir industry and the internet.

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To summarize, it will be argued that a sustainable future for the archaeological heritage is only possible if we understand the historical conditions of its formation, but also explore its potential to mobilize new forms of action and formulate new readings of the past.

The project is producing a range of innovative didactic materials which bring together an integrated vision of heritage education and vocational training of the integrated archaeological and natural heritage. The didactic content is being produced by applying innovative practices in education and training and the digital method ensures that the ongoing changes that concern the heritage fields and the analysis of existing training courses. These analyses made it possible to define the didactical needs of these groups and to apply this in terms of the design of new training contents and methods. The didactic materials cover the most relevant topics regarding the specific course and extend to the most important aspects of the subjects.

The didactic materials are being produced by applying innovative practices in education and training and will be stored in an online Content Repository. Flexible content authored supporting the web-based Content Repository software enables the storage and processing of distance learning content in a SCORM standard, to facilitate its further expansion and enhancement.

The training materials aim to cover the needs of rapidly changing practices in the protection and management of archaeological and natural heritage, as well as recognising the significance of integrated heritage in spatial planning and regional development policies. These materials have been produced following the detailed analysis of the state-of-the-art of training in both heritage fields and the analysis of existing training courses. These analyses made it possible to define the didactical needs of these groups and to apply this in terms of the design of new training contents and methods. The didactic materials cover the most relevant topics regarding the specific course and extend to the most important aspects of the subjects.

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Humans research perspectives on contemporary society are currently “hot topics” on the European scientific agenda. This theme seeks to examine how archaeological knowledge is used and re-used in contemporary society; how archaeological heritage is valued; how additional values are created; how archaeologists can participate in creative cultural life, activity and business. The theme seeks to define how solutions for contemporary societal challenges are promoted and supported by the role of IT based networks of knowledge in society. In that context the theme seeks to define what current questions are important for understanding the social role of archaeology.

This theme invites scientists, researchers and practitioners interested in the current and potential use of archaeology as a tool for informing positive societal change. The theme seeks to extend beyond the archaeological sciences, examining a long list of topics. These include: the role of non-profit organizations and communities; issues of social engagement and exclusion; links to creative and cultural industries; social and cultural innovation; current definitions of social capital and broader economic impact; participatory culture and creative collaboration; medias and social networking; school education and interests of Y and Z generations; narratives, identities, participatory culture and creative collaboration; medias and social networking; innovation; current definitions of social capital and broader economic impact; exclusion; links to creative and cultural industries; social and cultural for-profit organizations and communities; issues of social engagement for the current and potential use of archaeology as a tool for informing positive societal change. In that context the theme seeks to define what current questions are important for understanding the social role of archaeology.

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FROM THE COLOSSEUM TO PALMYRA. APPROPRIATION AND OWNERSHIP OF ARCHAEOLOGICAL HERITAGE IN A GLOBAL WORLD

Saturday, 3 September 2016, 09:00-13:00
Faculty of Philosophy, Room 209

Author - Gori, Maia, University of Heidelberg, Heidelberg, Germany (Presenting author)
Co-author(s) - Ravetto Lam, Martina, University of Amsterdam, Amsterdam, Netherlands
Co-author(s) - Celli, Elisa, Museo Civico Etrusco Romano di Trevignano Romano, Trevignano Romano (Roma), Italy
Co-author(s) - Pintucci, Alessandro, University of Rome La Sapienza, Rome, Italy
Co-author(s) - Pesci, Paolo, University of Southampton, Southampton, United Kingdom

Keywords: appropriation, conflict, identity
Presentation Preference - Regular session

Over the last decades, there has been substantial research into the relationship between archaeology and politics. Early research explored the intersection between archaeology and State focusing on nationalism, and demonstrating that there is no such thing as non-political, value-free archaeology. Nationalism stimulated the very creation of archaeology as a science and has informed the organization and infrastructure of archaeological knowledge. However, more recent trends focus on archaeology’s relation to Modernity, insisting on the concept that archaeology has to be viewed as cultural product. As every cultural product, archaeology as a discipline is inherently a practice of cultural appropriation. Archaeologists perceive themselves as officially entitled by the society to use archaeological material as resource for understanding the cultural past in pursuit of the “truth”. The vision of the past emerging from analyzing the dynamic nature of appropriation of the past as an intentional process – whose mechanism affects social change – is that uses of the past have to be considered as points to competing visions of the future at both individual and group levels. Scientific archaeology also adopts such a vision. The debate on the notion of appropriation and ownership, the role of governmental bodies as they contribute to the growing importance and necessity of responses on heritage security and protection in the entire region.

The efforts of protection, preservation and conservation cultural heritage in Turkey are largely dictated by The Ministry of Culture and Tourism. Growing economic investment on the construction of new public museums emphasizes the importance placed on the preservation and the display of the nation’s historical and cultural wealth. These pristine contexts, however, stand in juxtaposition to the complex dynamics among Turkey’s southeastern neighbors where the calculated destruction of cultural heritage has prompted new initiatives of protecting sites and artifacts across the region. Working with the American Research Institute in Turkey (ART) and the US Embassy in Ankara, the Ministry of Culture and Tourism has recently addressed these dynamics and with a series of new programs and projects addressing the increasingly important issues of security and protection. This paper focuses on these efforts as they contribute to the growing importance and necessity of responses on cultural heritage security and protection in the entire region.
A hot topic of debate in the agenda of Institutions and associations in the field of both tourism and cultural heritage, the present-day administration of the Colosseum and other archaeological sites of Rome may represent a meaningful model for analyzing the value acquired by heritage and archaeology in contemporary Italian society. The Italian word “valorizzazione” (enhancement and promotion), in the mind of lawmakers, is meant to connect the intrinsic value – historical, archaeological, cultural in a wider sense – of the heritage with the economic return of its exploitation. During these recent years, though, in the wake of mass tourism, marketing strategies (“exploitation”) are growing in importance with respect to the cultural issues which should appeal visitors (“valorizzazione”). For instance, temporary exhibitions of questionable scientific contents are promoted as a way to increase entrance fees, while panels and other educational tools seem to be inadequate to the audience needs. As a result, in other terms, is there the strong risk of a mere economic use devoid of real cultural contents and intentions? On the other hand, what does the general public (in this case study meant as foreigner tourists in Rome) perceive when visiting Rome? Is the Colosseum simply a “must-see” destination or a real “cultural experience”?

In trying to shift the discourse of Albanian spiritual identity away from a democratic revival of main religious traditions and possible political institutionalizations of culture, a fragment of the academic world hypothesis for historical spiritual independence. “A “[i]n plain language, that which is personal, that which is interior or immaterial, that which is one’s experienced relationship with the sacred, and that wisdom or knowledge which derives from such experiences (Heelas, 2001).”

In this paper I maintain that Albanian analysts are fashioning a post-communist academic discourse in favor of the construction of a unique vernacular transcendent tradition. To highlight the above-mentioned casualty, I reconsider the present day focus on Illyrian mythology as informative of distinctive heritage and ancient Greek syncretism.

To this aim, I contend that efforts for the creation of a discursive platform on vernacular traditions are paradoxical due to the fact that they make the case for a new utopia, similar to the Albanian experience of what Schumpeter asserted to be a Marxist religion. The latter made reference to the everyday life, while constructing evidence for historical pasts that recalled its ideology and values (Qendra, 2014). Moreover, a focus on the vernacular is purported as inclusive of Albanian “metaphysical believers (Heelas, 2011)” into global postmodern discourses on faith, while it provides a rationale for dissociative “apolitical spiritual identities. A ‘[s]acred object usually would be located in a museum presenting to the society artistically or politically.

This speech is aimed at presenting the situation as per public commitment of Institutions, real or presumed enhancement of the cultural heritage, expectations of visitors and their fulfillment. At the purpose, the authors propose an investigation about more recent policies of investment and enhancement; a static analysis of the perception of the public through a survey led on site will be presented. In conclusion, considerations about the role archeologists may and should play in these various regards will be drawn, under the peculiar perspective of the authors who experience archaeology both in an academic and scientific way, and working as official tourist guides of Rome.

**TH3-02 Abstract 06**

**Alatri in the Sky with Diamonds**

**Author:** Pinuccio, Alessandro, University of Rome “LA Sapienza”, Roma, Italy (Presenting author)

**Keywords:** Alatri, polygonal walls, pseudoarchaeology

**Presentation Preference:** Oral

In the last decades, thanks to stratigraphic excavations and associated pottery analysis, many Italian opus poligonale monuments have been correctly dated to the Republican Era, deconstructing thus the idea of their belonging to the Archaic period or even earlier. Alatri, a well-known archaeological site close to Rome, is a paradigmatic example of new scientific methods proving wrong old chronologies and theories. The polygonal walls of the city and its acropolis, indeed, date to the 3rd century BC proving wrong the traditional Archaic or even Pelasgic chronology. This new chronological and cultural framework for the old city sparked a passionate debate amongst local historians, who believe that the construction of the Alatri complex pre-dates the Roman arrival in the region. Local archaeology amateurs, thus, opposed new dates and interpretations by having recourse to different theories, mainly based on archaeoastronomy. Alatri was associated to sites traditionally connected to pseudoarchaeology, like the Egyptian pyramids, and to the alleged presence of linguistic signs from other parts of the Mediterranean, linking also the parentage of the walls to ancient Middle East civilizations, like the Hittites, authoritative and mysterious enough to replace the hated Roman invaders and enough far away not to be perceived as invaders themselves. This paper will focus on Alatri and will address cultural, social, and psychological aspects connected to the denial of the Roman paternity of Alatri monuments. Why the inhabitants of a city of Latium Velus need to seek different and older origins for their city from the ones provided by official archaelogy? We will also try to explain why – in addition to communicate the scientific results to the society at large – it is important for mainstream archaeology to engage with non-professionals amateurs even if the debate occurs in the archaeofantasy arena.

**TH3-02 Abstract 07**

**The past as a Consuming Object**

**Author:** Masoudi, Arman, Tehran, Iran (Presenting author)

**Co-author(s):** Papilo Yazdi, Leila, Neyshabour, Iran

**Keywords:** consuming society, archaeological record, middle eastern archaeology- vandalism-nationalism

**Presentation Preference:** Oral

Consuming society is a society within all agents and individuals are being encouraged to sell, buy and consume things. In such a society, firstly, all the phenomena would change into a commodity while it also put the individuals in endless networks of things, icons. Gradually, consuming changed into a social performance in which the actors are all the human being living in the society. Being consumed, the objective past is being transformed into an everyday commodity and sold in below manners:

* Politically, the past is being applied in order to conform the society or propagate a special type of identity.
* The past can be used also as a luxury presenting status distinction. Museums and galleries, the new context of ancient objects, let middle and well-off classes to own or observe the “glory” of the past.
* Artistically, lots of archaeological objects are being used to design new logos, fashion and souvenirs. In such a way, the object takes new iconic meanings, a recent one.
* A very modern use of the past represents in the form of vandalism. According to Freud, part of human instinct is always eager to destruct and death. As a consequence of political abuse of the past, we encounter the daily destruction of heritage in recent century which has in its nature an iconic message.

What’s the role of the archaeologist in the process of object transformation from a meaningless thing to a commodity? The archaeologist reproduce a thing by excavating it, by giving birth to it, by giving it a new name, a new context. Afterwards, the object usually would be located in a museum presenting to the society artistically or politically.

In this article, the authors investigate the different levels of consuming past in Middle East assessing the role of archaeologists in each level.

**TH3-02 Abstract 05**

**Interpretative appropriation as religious utopia: Illyrian mythology after communism**

**Author:** Bekteshi, Arba, University of Tirana, Faculty of History and Philology, Tirana, Albania (Presenting author)

**Keywords:** Illyrian mythology, interpretative appropriation, material encounters

**Presentation Preference:** Oral

In trying to shift the discourse of Albanian spiritual identity away from a democratic revival of main religious traditions and possible political institutionalizations of culture, a fragment of the academic world hypothesis for historical spiritual independence. “A “[i]n plain language, that which is personal, that which is interior or immaterial, that which is one’s experienced relationship with the sacred, and that wisdom or knowledge which derives from such experiences (Heelas, 2001).”

In this paper I maintain that Albanian analysts are fashioning a post-communist academic discourse in favor of the construction of a unique vernacular transcendent tradition. To highlight the above-mentioned casualty, I reconsider the present day focus on Illyrian mythology as informative of distinctive heritage and ancient Greek syncretism.

To this aim, I contend that efforts for the creation of a discursive platform on vernacular traditions are paradoxical due to the fact that they make the case for a new utopia, similar to the Albanian experience of what Schumpeter asserted to be a Marxist revolution. The latter made reference to the everyday life, while constructing evidence for historical pasts that recalled its ideology and values (Qendra, 2014). Moreover, a focus on the vernacular is purported as inclusive of Albanian “metaphysical believers (Heelas, 2011)” into global postmodern discourses on faith, while it provides a rationale for dissociative “apolitical spiritual identities. A ‘[s]acred object usually would be located in a museum presenting to the society artistically or politically.

This speech is aimed at presenting the situation as per public commitment of Institutions, real or presumed enhancement of the cultural heritage, expectations of visitors and their fulfillment. At the purpose, the authors propose an investigation about more recent policies of investment and enhancement; a static analysis of the perception of the public through a survey led on site will be presented. In conclusion, considerations about the role archeologists may and should play in these various regards will be drawn, under the peculiar perspective of the authors who experience archaeology both in an academic and scientific way, and working as official tourist guides of Rome.
OPEN ACCESS AND OPEN DATA IN ARCHAEOLOGY: FOLLOWING THE ARIADNE THREAD

TH3-03

Thursday, 1 September 2016, 09:00-13:00 Faculty of History, Room 218 Author - Wright, Holly, Archaeology Data Service, York, United Kingdom
Co-author(s) - Richards, Julian, University of York, York, United Kingdom (Presenting author)
Co-author(s) - Siegmund, Frank, Universität Düsseldorf, Düsseldorf, Germany
Co-author(s) - Gaser, Guntram, Salzburg Research, Salzburg, Austria

Keywords: Access, Open Data, Publication

Presentation Preference - Regular session

Will the availability of open data change the nature of archaeological research and publication? Will it also impact the ways in which archaeologists engage with wider communities? The European Science Foundation and other leading European research-funders have declared their support for the “Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities”, a far-reaching restructuring of scientific publishing in favour of open access that will take place before the end of the current decade. In parallel, the infrastructure necessary for open data is being created and the political pressure to use it will increase. Many areas of the humanities in Europe, including archaeology, still find this a difficult step to take. At present, the majority of highly renowned journals continue to be published in the traditional way, and research data are still generally unpublished. At the same time, the early adopters of open access and open data are still battling with the problems of how to implement it in practice. The EC Infrastructures funded ARIADNE project is working to bring together archaeological research data from across Europe, for use and re-use in new research. There are challenges, such as raising awareness about the available data, integrating datasets produced by very different projects and methodologies and various technologies. There are GIS, databases, 3D data, scientific datasets and more, all produced in a variety of languages, and all requiring differing approaches. This session is sponsored by the ARIADNE project, follows on from Barriers and opportunities: Open Access and Open Data in Archaeology at EAA 2015, and will provide further updates and overviews relating to open access and open data.

TH3-03 Abstract 03

Requirements for open sharing of archaeological research data

Author - Dr. Gaser, Guntram, Salzburg Research, Salzburg, Austria (Presenting author)

Keywords: e-infrastructures, open data, repositories

Presentation Preference - Oral

There are several good arguments for open research data and over the last few years expectations of open sharing of publicly funded data have increased. For example, re-use of data in further research (e.g. based on combined data) is expected to provide much return on investment. Considerable progress has been achieved with regard to e-infrastructures and services for data sharing, access and (re-) use, but the institutional requirements are lagging somewhat behind. Such requirements include the extension of open access mandates from papers to research data, available repositories adequate for research data, and making sure that data sharers receive the credit they deserve. Researchers still perceive more obstacles than incentives for opening up their data, including additional effort, lack of academic reward, concerns that data might be misused, and more. Indeed, clear evidence of benefits of data publication, re-use and citation – both on the community and individual levels – is crucial for pursuing forward the open data agenda.

This paper will give an overview of the current landscape of e-infrastructures and open access resources for archaeological and other cultural heritage research, and highlight institutional and other requirements for further progress and innovation through open data over the next 5 to 10 years.

TH3-03 Abstract 02

The Reputation effect

Author - Dr. Gattiglia, Gabriele, University of Pisa, Viareggio, Italy (Presenting author)
Co-author(s) - Anichini, Francesca, University of Pisa, Viareggio, Italy

Keywords: open access, open data, Reputation

Presentation Preference - Oral

Archaeologists recognise the potential impact that the sharing and re-use of data can bring: the benefits of accessibility, both as open access and open data, are evident for archaeology, given the primary and unrepeatable status of most data sets. Nonetheless, archaeologists have sometimes been reluctant to share their primary research data. An explanation for this could be a research system, both academic and professional, driven by individual reputation expressed in ranked publications. This system could be labelled as a reputation economy. In a reputation economy, it is necessary both to provide adequate formal recognition and to foster network-based interaction.

The recognition for making data available to other researchers means to provide data citations, so on January 2015, the MAPPa Lab of the University of Pisa promoted the first peer review Data Book dedicated to Italian archaeology. The idea was based on the assumption that data need to be treated as a relevant part of the archaeological record and that the data paper (and not only data paper) should be connected to primary data. These biannual volumes called MAPPa Data Book are conceived as a series of archaeological monographs designed with a dual level of publication: a paper, in which the archaeologists can analyse the data recorded, and the data set published as open data in the MOD (MAPPa Open Data), the open data repository of Italian archaeology. The volumes are published as open access and in a print on demand mode.

As for fostering network-based interaction, we are going to launch a communication campaign aimed to promote the use of academic social network, such as academia.edu and researchgate.net, for embedding the links to the data sets archived in our repository. In this way, on the one hand the archaeologists that share their data can take advantage of the academic social network realised by these platforms and of the metrics that reflect the impact of a contribution, on the other hand the repository can focus on data publication and long term preservation.

Thus archaeological data sharing becomes a way for researchers to collaborate and thereby meet the needs of an increasingly complex research landscape, and the reputation effect becomes a way to foster data re-use.

TH3-03 Abstract 01

Antiquarians in the 21st Century: Opening up our data

Author - O’Riordan, Emma Jane, Society of Antiquaries of Scotland, Edinburgh, United Kingdom
Co-author(s) - Osborne-Martin, Erin, Society of Antiquaries of Scotland, Edinburgh, United Kingdom (Presenting author)

Keywords: open access, publishing, research

Presentation Preference - Oral

The Society of Antiquaries of Scotland has been an active publisher of Scotland’s history and archaeology since 1792; the Proceedings of the Society of Antiquaries of Scotland (PSAS), has been the primary journal dealing with Scotland’s past in its British and European context since 1851. Publication in PSAS has often been seen by many archaeologists as the ‘end’ of the research cycle: excavation is followed by publication, and the process is complete. However, there is increasing awareness that the final report alone does not tell the whole story, and many readers would also like to examine raw data. In 2001, the Society created a new, fully peer reviewed, freely available online journal, Scottish Archaeological Internet Reports (SAIR), so was an early adopter of Open Access in an archaeological context. SAIR was intended to provide a new, lower-cost publication outlet for detailed archaeological reports; over the last fifteen years it has evolved to include the publication of many different types of projects – including large-scale surveys, gazetteers and conference proceedings – which would not be possible or desirable to publish in print for various reasons.

The Society also runs the Scottish Archaeological Research Framework (ScARF). Launched in 2012, this collaborative project brought together experts from a range of disciplines to compile a peer-reviewed summary of our archaeological knowledge up to that point and agree where future research should be directed. The entirety of Scottish archaeology was split into nine panel reports, all of which are available for free download from the project website or can be viewed on the wiki-style website itself. As such, it is in the first of its kind in archaeology. The Society is contemplating how best to take PSAS, SAIR and ScARF forward in an Open Access world. Our audiences are increasing, both in number and in variety. There have been over 400,000 downloads from Society’s publication archives held by the Archaeology Data Service (ADS) since 2011, and over the past three years ScARF has seen over 262,000 page views. And yet these final reports are only the tip of the archaeological data mountain. As an archaeological publisher, if we aspire to the true aims of Open Access, we should be making the original data available for re-use, data mining and new interpretations. But how can these aspirations be carried out in practice when the data is so vast and varied? As a small independent organisation, we must look to collaboration. How best to do this? One possibility is drawing from the models created by computer scientists and scientific publishers more used to dealing with raw data rather than ‘coffee-table books’. However, making the data available is not only a technological issue there are already data downloads available in parts of ScARF and SAIR, for example - but a cultural one. Many archaeologists are cautious about openly sharing raw data and we must consider how best to reconcile the needs of authors and remaining true to our own aims of truly open knowledge.

Requirements for open sharing of archaeological research data

Author - Dr. Gaser, Guntram, Salzburg Research, Salzburg, Austria (Presenting author)

Keywords: e-infrastructures, open data, repositories

Presentation Preference - Oral

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TH3-03 Abstract 04
Beyond the Pale: grey literature as a method of publication

Author: - Dr. Evans, Tim, Archaeology Data Service, York, United Kingdom (Presenting author)
Keywords: grey literature, open access, publication
Presentation Preference - Oral

TH3-03 Abstract 05
Legacy data and archaeological archives in Europe and North Africa

Author: - Dr. Fentress, Elizabeth, Rome, Italy (Presenting author)
Keywords: Archives, Legacy Data, North Africa
Presentation Preference - Oral

TH3-03 Abstract 06
Digitizing Early Farming Cultures: integrating resources from Neolithic Greece and Anatolia

Author: - Dr. Aepplik, Edeltraudt, ÖAW, Vienna, Austria (Presenting author)
Co-author(s) - Akdas, Nasur, Ankara, Turkey; ÖAW, Vienna, Austria
Co-author(s) - Stucic, Sasa, ÖAW, Vienna, Austria
Keywords: Neolithic sites and finds, open data
Presentation Preference - Oral

TH3-03 Abstract 07
The SITAR project (Rome).
Achieving interoperability and opening data: practical implementation

Author: - Bol, Valeria, archaeological consultant, Roma, Italy (Presenting author)
Co-author(s) - Dr. Di Giorgio, Sara, Istituto Centrale per il Catalogo Unico delle biblioteche Italiane, Rome, Italy
Co-author(s) - Dr. Sertorenz, Miglia, Soprintendenza Speciale per il Colosseo, il Museo Nazionale Romano (SSCot), Rome, Italy
Co-author(s) - De Tommasi, Andrea, Soprintendenza Speciale per il Colosseo, il Museo Nazionale Romano (SSCot), Rome, Italy
Keywords: ARIADNE, CIDOC-CRM, Open Data

TH3-03 Abstract 08
Integrating data for archaeology

Author: - Dr. Gavinis, Dimitris, Athena Research Center, Maroussi, Greece (Presenting author)
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Co-author(s) - Olsson, Olif, Swedish National Data Service, Gothenburg, Sweden
Co-author(s) - Agenti, Eleonora, Athena Research Center, Maroussi, Greece
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Co-author(s) - Cuy, Sebastian, German Archaeological Institute, Berlin, Germany
Keywords: Data enrichment, Data integration, Infrastructure
Presentation Preference - Oral

In the past years, infrastructure projects in the Archaeology domain have focused on data aggregation in order to bring to the end users the vast amount of information gathered from various organizations and stakeholders. The typical processes found in a...
data aggregation infrastructure include: ingestion, normalization, transformation and validation processes that mainly focus on the homogenization and cleaning of heterogeneous data. A portal is usually employed to present this information to the end users and is met with limited success due to the vast information contained. In order to increase the quality of services that are provided to end users, the European funded project Ariadne (http://www.ariadne-infrastructure.eu/) aims at integrating this data by modelling the underlying domain and providing the technical framework for automatic integration of heterogeneous resources.

The heart of the infrastructure lies in the underlying domain model: Ariadne Catalog Data Model (ACDM), a DCAT derived model which models a large number of entities such as Agents, Language resources, datasets, collections, reports, services, databases, etc. With the help of a of micro-service oriented architecture and a set of powerful enrichment micro-services all aggregated data are transformed into XML and RDF, annotated over subject, space and time with the help of AAT, Geonames and Perio.do thesauri (thus establishing a common reference) and interlinked with each other based on their structural or logical relationships. The data integration services can mine for links among resources, link them together and against language resources, and their vocabularies. Complex records can be split into their individual components, represented, enriched and stored separately while maintaining their identity using semantic linking. Each integrated resource is assigned a URI and published to:

a) Virtual RDF Store in RDF which provides a SPARQL interface
b) to Elastic Search in JSON which provides a powerful indexing mechanism that can help present and associate resources accurately in real-time.

This approach can provide developers and creative industries with the means to create innovative applications and mine information form the RDF store.

End users ranging from simple visitors to domain researchers can access this data through the infrastructure’s portal which is capable of hiding the complexity of this plethora of data, filter the results using a plethora of filters and present connected resources in a way that can help guide the user instead of confusing him/her.

The technical infrastructure has been developed using various programming languages such as Java, PHP, Javascript. It is distributed spanning multiple virtual machines and brings together different established technologies and components. Both the technical infrastructure and the portal will be presented and demonstrated.

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TH3-03 Abstract 09

Linked Open Data Approaches within the ARIADNE Project

Author: Dr. Wright, Holly, University of York, York, United Kingdom (Presenting author)

Keywords: ARIADNE, Linked Data, Open Data

Presentation Preference - Oral

ARIADNE is a four-year EU FP7 Infrastructures funded project, made up of 24 partners across 16 European countries, which hold archaeological data in at least 13 languages. These are the accumulated outcome of the research of individuals, teams and institutions, but form a vast and fragmented corpus, and their potential has been constrained by difficult access and non-homogenous perspectives. ARIADNE aims to bring together and integrate existing archaeological research data infrastructures, so researchers can use these distributed datasets in combination, and in new ways. This paper will give an overview of the progress of the ARIADNE project, focusing on efforts to create a shared infrastructure into which metadata is gathered, and a portal to allow cross-search of this metadata. To this end mapping work has been carried out to facilitate searching across space, time and subjects, using Linked Open Data ( LOD). This work represents LOD best practice by incorporating existing international initiatives such as the Getty Art & Architecture Thesaurus, and contributing to emerging best practice initiatives like PerioDo. As ARIADNE is in its final year, conclusions can begin to be drawn about the challenges faced along the way, and possible directions for the future.

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TH3-04 Abstract 01

Medieval archaeology in Europe. Chronologies, topics, perspectives

Author: Dr. Carlo, Citter, University of Siena, Siena, Italy (Presenting author)

Keywords: Europe, medieval archaeology, Mediterranean

Presentation Preference - Oral

Europe is a small peninsula at the western corner of Eurasia. However, its history is fragmented. There is a general agreement to consider middle ages the period between AD 500-1550, though this is only an agreement among scholars. Terms like late antiquity is meaningless in northern regions, while late iron age is out of the time span for the Mediterranean. Coherent chronologies have been adopted in each region, but it is not easy to relate all of them one another. Topics are very different too. Christian organisation of towns and countryside is a key issue for the Mediterranean since 4th c., while in Scandinavia or the Slavic territories it occurs much later. The making of the medieval town has to relate with the Romanes past within the borders of the former empire, while it has different roots outside it. Material culture is different too. The impact of stone architecture is different both from a chronological and geographical point of view. Literary sources are almost absent for many regions up to the Carolingians, while for others they are abundant since the late Roman age.

Thus, it seems that medieval archaeology in Europe should resign itself to be an undefined mass of data within a time span which has nothing to do with reality. On the contrary, it is clear that the end of the Roman west, the fragmentation of the Mediterranean, the emerging countries of the northern and eastern regions allowed a closer relationship even at a long distance. Muslims were in contact with the Vikings, the Saxons with the Mediterranean, people moved to trade, and not only for this.

In the north of Europe, medieval archaeology is meaningless in northern regions, while late iron age is out of the time span for the Mediterranean. Coherent chronologies have been adopted in each region, but it is not easy to relate all of them one another. Topics are very different too. Christian organisation of towns and countryside is a key issue for the Mediterranean since the 4th c., while in Scandinavia or the Slavic territories it occurs much later. The making of the medieval town has to relate with the Romanes past within the borders of the former empire, while it has different roots outside it. Material culture is different too. The impact of stone architecture is different both from a chronological and geographical point of view. Literary sources are almost absent for many regions up to the Carolingians, while for others they are abundant since the late Roman age.

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TH3-04 Abstract 02

Islamic archaeology: theoretical and methodological issues

Author: Asst. prof. Tavaniari, Cinzia, Abdulhamit Gül University, Kayseri, Turkey (Presenting author)

Keywords: Islamic archaeology, theory, methods

Presentation Preference: Oral

This contribution wishes to present an appraisal of the discipline of Islamic archaeology and to analyse and discuss its development and the current trends in the discipline.

The origins of Islamic archaeology span a little more than a century and its strong initial relationship with the history of art and monumental architecture shaped its early development. Only in the 1980s the Islamic archaeology could gain its independence from these fields of study and start facing new challenges such as carving its place within the field of Islamic studies and looking for common approaches with other fields of archaeology. In the last thirty years Islamic archaeology has thus witnessed a great development both in discoveries and interpretation, where it came to apply a long durée approach to the study of the material culture and the methods of monastic archaeology to the castles of the Middle East. Like other historical archaeologies, Islamic archaeology has often suffered from a sense of inferiority to the written records and has only recently begun to overcome it.

One of the first and foremost articles dealing with the theoretical issues of the discipline was published at the end of the 1980s (Insoll, 1999) and since that moment publications taking a stake of the discipline and its theoretical frameworks have grown (see for example Walmley, 2004 and 2013; Milwright, 2010; Tonghini 2014).

The presentations aims at identifying the influences different branches of archaeology had on Islamic archaeology and at comparing the research approaches of Islamic archaeology with archaeologies from other regions and periods. One of the objectives of the contribution is also to discuss the contemporary and urgent challenges of the discipline. In fact, I believe that Islamic archaeology is essential to help build dialogues between Islamic countries and other countries, particularly Europe, and needs to be recognized as a fundamental element to achieve a comprehensive knowledge of the development of the Mediterranean basin. Finally, present weaknesses of the discipline and future directions will also be debated; particularly, I will examine the role of digital technologies in the field of Islamic archaeology.

TH3-04 Abstract 03

Ottoman Mediterranean and its archaeology between two worlds

Author: Dr. Dikiyay, Fahri, TED University, Ankara, Turkey (Presenting author)

Keywords: Ottoman Archaeology, Symbiosis, the Mediterranean

Presentation Preference: Oral

The Ottoman legacy has left a significant imprint on the social and cultural relations in the Mediterranean. The chronological boundaries of Ottoman legacy are shared in knowledge, especially in the Levant. But, this legacy and its chronological contexts protect a local and differentiated knowledge, also. Ottoman symbiosis and cohabitation created a symbiosis between its central and peripheral clusters. The archaeological data and its distribution in the Ottoman Mediterranean indicate Ottoman policy and its colonization effects on the social and economic structures. This paper aims to discuss Ottoman knowledge and its archaeological clusters to identify Ottoman Mediterranean and some problematic and debatable validity in the current modern and nationalist archaeologies.

TH3-04 Abstract 04

Beyond hierarchy: Common property rights & migration in post-Roman Iberia and the Mediterranean

Author: Prof. Staatsis, Francesco Romana, University of Rome Sapienza, Roma, Italy (Presenting author)

Keywords: Mediterranean landscapes, Monasticism, Sources

Presentation Preference: Oral

The spread of monasticism is one of the most important phenomena in the medieval Mediterranean area. Here it was born and it was experienced from the architectural, topographical and administrative point of view. From the beginning of the Seventh century monasteries start to spread their influence in affecting the landscape expressing themselves as architectural complexes and actors in the agricultural exploitation of natural resources. Whole areas were reshaped according to a process that is possible to rebuild thanks to the integration of different sources. In Italy, the huge number of sources kept in the monastic archives and the static nature of the rural landscape, are the starting point for the methodological development of a monastic topography based on the integration of different written records, cartography, iconology compared with the archaeological data giving as return a multi-layered historical perspective with distinguished and integrated levels.

TH3-04 Abstract 05

Monastic Archaeology: sources and methodology in the Mediterranean

Author: Dr. Tajarino, Carlos, Oliyepic, Vitoria-Gasteiz, Spain (Presenting author)

Keywords: Archaeological theory, Post-imperial period, Social conflict

Presentation Preference: Oral

In the last two decades the debates over Early Middle Ages in Western Europe have been revitalized due to two intertwined processes. On the one hand, the incorporation to the scientific research of a huge amount of new data coming from Commercial Archaeology and the resulting damage to heritage within a capitalist management in pre-crisis times. On the other hand, it has been revitalized because of the introduction of concepts such as “identity”, “religious community” or “ethnicity” within archaeological and historical interpretation of the period. The renewal of identity and ethnic interpretations, almost lost after World War II, have introduced new important and interesting debates, but also recovered others, even though the discipline, in general terms, is still dominated by a kind of naive empiricism which pays little attention to the social and political implications of the archaeological data. However, as philosophers like Slavoj Žižek claims, this “ethnic revolt” is not casual but closely related to the crisis of the late capitalism and used as a shield against postmodernism traumas. Early Middle Age archaeology, as a scientific field (following Bourdieu’s characterization) has not been isolated from this process and in some cases, has not only misrepresented the archaeological record, but also has been the basis for racist politics in Western Europe. One of the consequences of this is the blurring of Early Middle Ages as a period of high social conflict among different social strata, beyond ethnic parameters. In this paper, we will try, in the first place, to make a deconstruction of some current discussions over Early Middle Ages and, in the second place, to make a social and anthropological interpretation of Early Middle Ages in terms of social conflict and of economic and symbolic adaptation of local communities, overall peasant societies, to the failure of a Roman project of World Empire. For that purpose, some concepts from Marxist and Critical Historical Archaeology (Family of L. M. Marty) will be used to interpret some key elements of post-imperial archaeology, using the central part of the Iberian Peninsula as a case study within the Mediterranean context. This territory has been recently analysed in a PhD research and is inserted in a Research Project on social inequalities in Early Middle Ages. Thus, domestic architecture, settlement patterns or funerary remains will be analysed within the theoretical frame, trying to contextualise but also to extrapolate consequences and ideas for other case studies.

TH3-04 Abstract 06

Beyond hierarchy: Common property rights & migration as a factor in rapid change in material culture

Author: Dr. Oosthuizen, Susan, University of Cambridge, Cambridge, United Kingdom (Presenting author)

Keywords: common property rights, governance, migration

Presentation Preference: Oral

This paper seeks to contribute to the debates regarding chronological and spatial incongruities which exist between the realms of the Islamic, Byzantine, and Mediterranean archaeologies, and will propose a theoretical framework which helps to reconcile and integrate those fields through archaeological common ground. The basis for this archaeological model is the site of Darband in the Eastern Caucasus—the fortress that marked the frontier between the world of the Christian culture of the Late Antiquity/Byzantine Empire, the Islamic Caliphate, and Medieval North represented by the indigenous people of the Caucasus and the Steppe Nomads. Besides being a fortress and the wall built to separate the above-mentioned worlds for defensive purposes, this site is laden with deep religious meaning and it lives on as a sacred place where people gather and display their imperial and local identities, inscribe their religious testimonies, and perform rituals and commemorative actions executed in direct and encoded forms. All these cultural activities shall leave archaeological traces. In order to contextualize this common ground and meeting place, I propose to look at this site through Lefebvrean Spaces, namely at the multiple spaces of representation extant at the times of Darband: “The Production of Space” by Henry Lefebvre (1991) outlines three main categories of space: perceived (physical) space, conceived (mythical, conceptualized, encoded) space, and lived space (the space of political negotiation between all categories, including archaeological “spaces of representation”). In my paper, I will argue that this theoretical framework can be useful in order to reconcile different archaeologies at the common ground where physical space and knowledge are shared as a part of everyday life.

TH3-04 Abstract 07

Beyond hierarchy: Common property rights & migration as a factor in rapid change in material culture

Presentation Preference: Oral

This paper seeks to contribute to the debates regarding chronological and spatial incongruities which exist between the realms of the Islamic, Byzantine, and Mediterranean archaeologies, and will propose a theoretical framework which helps to reconcile and integrate those fields through archaeological common ground. The basis for this archaeological model is the site of Darband in the Eastern Caucasus—the fortress that marked the frontier between the world of the Christian culture of the Late Antiquity/Byzantine Empire, the Islamic Caliphate, and Medieval North represented by the indigenous people of the Caucasus and the Steppe Nomads. Besides being a fortress and the wall built to separate the above-mentioned worlds for defensive purposes, this site is laden with deep religious meaning and it lives on as a sacred place where people gather and display their imperial and local identities, inscribe their religious testimonies, and perform rituals and commemorative actions executed in direct and encoded forms. All these cultural activities shall leave archaeological traces. In order to contextualize this common ground and meeting place, I propose to look at this site through Lefebvrean Spaces, namely at the multiple spaces of representation extant at the times of Darband: “The Production of Space” by Henry Lefebvre (1991) outlines three main categories of space: perceived (physical) space, conceived (mythical, conceptualized, encoded) space, and lived space (the space of political negotiation between all categories, including archaeological “spaces of representation”). In my paper, I will argue that this theoretical framework can be useful in order to reconcile different archaeologies at the common ground where physical space and knowledge are shared as a part of everyday life.
Sudden and almost complete changes in material cultural are, in archaeological contexts, frequently ascribed to migration. An inquisitive approach is the almost complete replacement of Romano-British artifacts by those from north-west Europe in many parts of England in the first few decades of the early fifth century AD.

The paper begins by offering a brief critique of current models for explaining such rapid change in which migration is given a leading role: military cohesion among migrant groups; their apparent resistance to assimilation; replacement of existing leaders by high status immigrants; and ethnogenesis, the deliberate framing of political ideologies aimed at rationalizing territorial control. It notes that all elements of such models take a 'top-down' view, in which access to power is predicated on status and wealth within hierarchical political structures, and where cultural change is explained in terms of leadership by an elite.

The paper moves to an alternative, experimental, 'bottom up' approach to investigating rapid changes in material culture. It begins with the premise that all aspects of a stable, sustainable, agricultural economy depend on property rights over land. Access to and exercise of property rights enable an individual to make a living, offer the opportunity to generate a surplus or acquire goods, and create opportunities for personal interaction with elites through tribute, gift-giving or taxation. An analysis focused on the practical management of agricultural property rights offers the possibility of a 'bottom up' perspective on cultural change that anchors abstractions about social relations into the everyday realities of making a living.

The paper then explores the impact of migration on the daily lives of peasant cultivators through their common property rights in territorial resources. It notes the structural link between property rights and governance, the role of the latter in the regulation, maintenance, protection and enforcement of property rights, and the generalized predictability of frameworks for governing shared resources - in particular their characterization as 'horizontal', predicated on equity among all right-holders and exemplified through normative expectations of participation and consensus. It goes on to examine Ravenstein's (1885) classic conclusions about migrants and the migration process through the lens of common property rights and their characteristic governance structures. It concludes that, however great sudden changes in material culture might be, if there is archaeological evidence for the contemporary continued exploitation of collective resources then it is highly likely that immigrants and their descendants were assimilated into receiving communities and that they were unlikely to have been a driving force in that cultural change.

The argument does not discount the possibility of cultural change as a result of variations in access to resources, wealth and status whether or not as a result of migration. Nor does it challenge the existence of political and social hierarchies. It argues, instead, that the complementary contribution of collective traditions should not be neglected in explaining transformative cultural change. The paper concludes by suggesting the need for more complex, more dynamic, perhaps even epidemiological, models to explain change in the human past.

**TH3-04 Abstract 08**

**Does Chronology Matter? The Early Medieval Venice Narrates through Water, Wood and Labor**

**Author** - Calaon, Diego, Stanford University, Stanford, United States of America (Presenting author)

**Keywords**: Anthropological Theory, Ecological Degradation, Historicism

**Presentation Preference** - Oral

How much do the historical events rewritten through archaeology speak for themselves as memories, and how much do the archaeologists construct them into cohesive narratives? This paper aims to consider the demanding activities of sequencing events and building effective chronologies in order to transform archaeological records in meaningful historical events. Using early medieval Venice and its origins as a test case, I would investigate the political and cultural role of pre-manufactured chronologies built around few problematic late antique and early medieval written sources in the interpretation and narrative of the archaeological records. I will also attempt a comparison between the different approaches to the materiality of the Venetian past including both Italian academics, conditioned by a strong historicist tradition since Croce’s works, and the international scholars’ community.

The paper, integrating ecological degradation and anthropological theory of materiality, aims to reassess the process formation of new settlements in the Venetian lagoons at the end of the Roman period. From Late Antiquity to the Early Middle Ages, specific ethnic and social groups developed a new perception of the geography of Europe and of the Mediterranean region. The unique relationship with the lagoon environment is bringing novel perspectives to the interpretation of archaeological dataset. The human-ecological relationships that underpinned the rise of Venice emphasize the social aspect of the materiality of the past, and simultaneously it seems to have a significant legacy in the present.

**TH3-05 Abstract 01**

**Nature: Cultures Heritage, sustainability and feminist posthumanism**

**Author** - Associate Prof. Christina, Fredengren, Stockholm, Sweden (Presenting author)

**Keywords**: Environmental Humanities, Heritage, Posthumanism

**Presentation Preference** - Oral

This paper makes use of feminist posthumanism to outline how a range of heritage policies, practices and strategies, partly through their base in social constructivism have a clear anthropocentric focus. Not only do they risk downplaying materiality, but also a number of human and non-human others, driving a wedge between nature and culture. This may in turn be an obstacle for the use of heritage in sustainable development as it deals with range of naturalized others as if they have no agency and leaves the stage open for appropriation and exploitation. This paper proves into what heritage could be in the wake of current climate and environmental challenges if approached differently. It explores how a selection of feminist posthumanisms challenge the distinction between nature/culture in a way that could shift the approach to sustainability in heritage making from a negative to an affirmative framing.

**TH3-05 Abstract 02**

**Time, Colonialism and the Intricacy of Relational Practice**

**Author** - Professor Corneli, Per, University of Gothenburg, Västra Frölunda, Sweden (Presenting author)

**Keywords**: Americas, Colonialism, Relationalism

**Presentation Preference** - Oral

In the context of destructive and fictive colonialism, questions of interaction and relationalism are crucial but also intricate and require subtle means of analysis. In the advent of European Colonialism in the Americas, the encounter is largely one of human exploitive and conflictual interaction, but also a question of humans encountering, relating to new bacteria, new animals, new vegetation. Opening for a fresh approach to these questions require a set of theoretical and methodological tools, which includes thoughts from feminist writers like Braddock. But there is also a need to critically attend certain aspects of relationist approaches, like those developed by Haraway or Barad. The general frame must allow for an intricate of time, for varied times and processual developments operating in different fields and in different spheres. Revisiting certain ideas from Marx, perhaps partly surprising, can prove productive and stimulate new approaches to questions of historical process, class and exploitation.
Where is the Feminism in Archaeology?

Author: Tonge, Joanna, University of Southampton, Poole, United Kingdom (Presenting author)

Keywords: Feminism, Gender, Survey

Presentation Preference: Oral

This paper examines the extent to which feminist theory has been integrated into research and teaching within archaeology. Based on a study of publications and the modules taught by archaeologists who have previously published on gender and feminism in archaeology, the state of the discipline in relation to feminist theory and the complexity and problematic features of the integration of feminism into mainstream archaeology was revealed. The results show that publications which are of interest to feminist scholars are found in many academic journals, yet a notable lack of archaeological publications explicitly assert a feminist perspective. Most publications have a tendency to take either a more neutral approach found in ‘apolitical’ gender archaeology or a post-processual interest in evidence, embodiment and phenomenology. Can we then assume that feminist archaeology has successfully managed to integrate into mainstream archaeological thought? Results of a survey of the profession, in particular of academics with teaching posts indicate that archaeological modules which focus on feminism in both undergraduate and postgraduate settings have now fallen by the wayside. By investigating publications of a specifically feminist or gender archaeology together with modules taught at universities across the Western academic archaeology tradition, the results of this research illuminate a post-modern trend to scrap categories and accordingly the marginalisation of those subjects which require categorisation for acknowledgement.

Politics and archaeology in an uncaring universe, or feminism without historical binaries

Author: Professor Robb, John, University of Cambridge, Cambridge, United Kingdom (Presenting author)

Keywords: evolution, gender, politics

Presentation Preference: Oral

This paper pursues the paradoxes which result from the collision of three facts: (a) Archaeological and historical accounts of the past are often taken as foundational narratives and laden with political meaning, following on from this, archaeologists have a responsibility to make sure that our work is used in productive rather than destructive political ways. (b) We also have a responsibility to say true things about the past. (c) People in the past were often deeply ‘political incorrect’, with attitudes and practices different from today’s and sometimes no doubt entirely appalling by modern standards. The prehistory of gender reveals examples where the two are not separable. For example, Archaeologists have responded to this paradox in varying ways, none satisfactory. One is by not engaging with the question of whether the past acts as a political mirror for the present. A second is by adopting a “see no evil” approach where we contemplate only positive aspects of the past. A third is to fit the past within the three traditional narratives (historical lack of change means natural inevitability, progress towards utopia, and progress towards dystopia). All of these rely upon an underlying, often unspoken rigid and distorting historical binary distinction between “us” and “them”, the modern and the pre-modern. As a counter-example, I explore a revisionist history of gender in which not only the “content” of gender but its existence and definitional form is seen to evolve continuously throughout human history. A feminist approach in this case is not about championing the interests of one sector, but about exploring the possibility for difference of all kinds, including historical. The result is a narrative which both accepts the past on its own terms and which we learn what history really implies about our present and our future.

Women and archaeology in Portugal during the 60ies of the 20th century: ‘exceptio firmat regulam’?

Author: Doctor Martins, Ana Cristina, Faculdade de Ciências Sociais e Humanas da Universidade NOVA de Lisboa, Lisboa, Portugal (Presenting author)

Keywords: Portugal, Theory, Women

Presentation Preference: Oral

In 1958, Lisbon hosted the first National Archaeological Congress. Being itself a novelty in the Portuguese archaeological panorama, this Congress has integrated other innovations, likewise a growing number of women in archaeology. Situation confirmed in the following decade, when the number of women dedicated to archaeology has been more evident. Toward several political factors that characterized the important ‘60s, influenced largely by changes observed in culture and cross-border mentality, as witnessed young graduates Portuguese archaeologists academically in other European countries.

Using methodologies of history of science and archaeology, and of gender studies, we will seek to comparatively analyze the status of women in archaeology practiced in Portugal in the 60ies. We will list, for that, names, research projects and knowledge production places. A method that will allow us to understand if the participation of women in archaeology in the country in those years, corresponded to the emergence of new research topics and ways to observe the material realities identified in the field and (apparently) absent from the archaeological record, as female ones. We intend, therefore, to realize to what extent women archaeologists contributed to the development and archaeology statement in Portugal, perceiving translated knowledge networks, or not, in sharing and perpetuation of theories and methods. Only then can we recognize the existence of individual scientific independence, especially in women, or, on the contrary, the (consciously or unconsciously) reproduction of already established methodological models.
TH3-05 Abstract 08
Contributions of social anthropology to the knowledge of the status of the adorned bodies in archaeology

Author: Dr. Belard, Chloé, University of Southampton, La Roche sur Yon, France (Presenting author)
Keywords: adorned body, gender archaeology, social anthropology

This paper proposal intends to present the first elements of a research project taking an interest in the visual effect of adornments, the social status of the body and gender ideology. The main issue is to determine how the social and symbolic status of the body can be understood in death archaeology by means of ethnographic record. Firstly, through different ethnographic data, it is possible to observe how adornments are used to emphasize the different parts of the body according to their attributes and their symbolic meanings.

Secondly, the social categorization and gender ideology related to adornments can be specified in view of social anthropology and in taking into account the notion of intersectionality. Three questions are fundamental: who are the wearers of adornments, why do they wear them and for whom? Furthermore, which aspects of adornments are used by several human groups as a medium to create social categorization and which other aspects can be individualized? Finally, how bodies and movements of men and women can be controlled by means of adornments and to which aspects of gender ideology of each society this can be linked? Therefore, this research project aims to investigate to what extent social anthropological knowledge can allow us to better understand the bodily and symbolic use of buried adornments.

TH3-05 Abstract 09
Was there always a man and a woman?
On flexibility of sexuality in historical Islamic Iran

Author: Prof. Paspil Yazi, Leia, Nayehnbour, Iran (Presenting author)
Co-authors: Dezhamkhooy, Maryam, University of Heidelberg, Heidelberg, Germany
Keywords: flexibility, Safavid Iran, Timurid Iran, sexuality, biosexuality, homosexuality

Presentation Preference - Oral

Being propagated reproductively, the general image of contemporary Middle Eastern Muslim women is comprised of feminine bodies rapacious for Muslim men. The same called Chador (veils), the ones who cry more than speak, feel more than deduct and are always fighting to be controlled by a patriarchal society. Such an image has been seriously produced based on a very recent dichotomy between genders, women and men. Violent dominant men/dominant women.

How much these images can be generalized to the past? During the last decade, the propagated image of Islamic sexuality has been very much challenged by historians. Referring the miniatures, sculptures and wall paintings, the performativity of gender during medieval ages can be very differently described from the recent propagated one.

Chronologically, by the entrance of Islam to historical Iran the change of the solid Zoroastrian dichotomic concept of men/women begun while afterwards the invasion of the region by central Asian Turks made biosexuality normative. Very famous pieces of literature such as Ghaboosnameh [from 10-17 centuries A.D] introduce the only real love, the love between two men or two women. Noteworthy, it seems that modern governments are responsible to change the bisexuality as normal sex orientation to the current one. Referring the miniatures, sculptures and wall paintings, the performativity of gender during medieval ages can be very differently described from the recent propagated one.

TH3-05 Abstract 10
How moral produce different - telling Nuu-chah-nulth whalebone clubs

Author: Dr. Marshall, Yvonne, University of Southampton, Southampton, United Kingdom (Presenting author)
Keywords: becoming, difference, moral geography

Presentation Preference - Oral

Wilson Duff (1975: 12) opens his book images stone b.c.: “Images seem to speak to the eye, but they are really addressed to the mind. They are ways of thinking, the guise of ways of seeing.” Duff went on to suggest that the choice of stone as a medium for seeing-thinking was a move designed to place thinking outside of time – and thereby into a world of being (cf Marshall 2000 World Archaeology). In a recent article in the Canadian Journal of Archaeology (2019), Natasha Lyons and I argued in a similar vein for an understanding of objects as spatial ‘tellings’ materialised in non-linear, non-narrative and therefore a-temporal forms. Our common position with Duff is that objects/images are arguments concerning possibilities for being and becoming, not representations of beings.

Using whalabone clubs as my forum, I show in this paper how the Nuu-chah-nulth people of Vancouver Island, British Columbia, create object ‘tellings’ (ways of thinking) which set out a moral or ontological geography. Moral travel through this geography constitutes a process of becoming which produces difference (cf Marshall 2012 Feminism Theory). Simple moral travel produces everyday growth and change. But when more fundamental transformation is sought, through engagement with great power or wealth, moral travel is demanding and dangerous. The transformative possibilities of moral travel are calibrated in effort and risk.

TH3-05 Abstract 11
Material feminisms and the question of anthropomorphism in northwest Argentina

Author: Alberti, Benjamin, Framingham, United States of America (Presenting author)
Keywords: Anthropomorphism, Feminism, Materiality

Presentation Preference - Oral

Elizabeth Grosz has argued that new ontologies are essential for new grounds of feminist politics. Anthropomorphism in ceramic forms, often encountered in archaeology, always risks reduction to only a metaphorical expression in which the substance of the thing - its materiality, its ground - is left unquestioned. An absolute divide between fleshly body and ceramic body underlies and results from such reductionism. Addressing the ontological status of sex, gender, and the materiality of bodies, as Grosz has for many years, provides new ways to conceive of different bodies and their relationships.

I bring into focus the potential for new ontologies of bodies informed by feminist and queer approaches to materiality through a study of a collection of anthropo- and zoomorphic ceramics from first millennium AD northwest Argentina. If, as Grosz suggests, difference is enacted equally through or across ‘natural’ and ‘cultural’ processes, the ceramics can be understood as materialities/ bodics that share processes in common with other bodics (flesh, stone, etc) regardless of the stuff out of which they are made. Anthropomorphism then becomes less a question of resemblance and more one of marking and enacting difference.

TH3-05 Abstract 12
Foreign women – from merchandise to merchant.
The change in interpretations

Author: Dr. Koch, Julia Katharina, Lektorat für Archäologie, Preetz, Germany (Presenting author)
Keywords: gender archaeology, mobility, social construction

Presentation Preference - Oral

Grave inventories which deviate from the norm of particular cemeteries are very popular in interpretations about prehistoric social structures. Special cases are people buried with imported grave goods and therefore discussed as indicators for different types of cultural contact and transfer. The focus of the paper is on the change in interpretations of female burials with foreign artefacts in Central European Bronze and Iron Age. In the 1960s the first perceptions of such prehistoric women in the “Högelgräber“- Bronz Age or in Late Iron Age burials near the oppidum Manching buried with foreign artefacts are combined with images of passive female roles. Influenced by a changed image of social female roles in Europe the interpretations permit actually similar Early Iron Age women an active role in trade networks around the Alpine. But independent of interpretations the archaeological data are always the same – female burial with a mixture of local and non-local jewellery. So, how can we know how active or passive such women could have been as social actors in prehistoric time? This paper discusses the change of interpretation for the background of the increasing influence of gender theories in Archaeology and asks about the possibility of approximation to prehistoric realities beyond modern ideals and utopian (feminist) wishes. A further aspect of this topic is the influence of the new scientific methods like isotope analysis on actual mobility models.
Implementing Intersectionality: Diversity of Viking-Age Shields

Author: PhD student O. Nærävärd, Kerstin, Stockholm University, Sundbyberg, Sweden (Presenting author)

Keywords: Identity, Intersectionality, Viking Age

Presentation Preference: Oral

This paper presents parts of my current research, in which I study Viking-age shields using intersectionality as an analytical tool. All though discussed for years, intersectionality as an archaeological analytical method is still relatively unexplored. Hence I will outline some possible methodological implementations of intersectionality with regards to a specific research material, using shields and representations of shields as an example. I will also present some of the identity categories that are visible in the material and how they possibly interact.

My research explores shields in archaeological contexts along two- or three-dimensional depictions of shields, how shields are described and in what contexts they occur in the Old Norse literature. By identifying four ‘shield categories’ I explore how different shields related to identity and social roles as well as practices during the Viking Age.

When analysing the shields with regards to identity and objects as identity markers, I aim to understand how the different shields reflect identities and practices that intersect. Using intersectionality as a multi-dimensional analytical tool for studying power and social hierarchy, by pinpointing different aspects of identity (such as gender, religion, class, etc.) I propose it is possible to identify features that overlap the material/non-material shields. Taking intersectionality as a starting point creates the potential to highlight the seemingly diverse and complex aspects of shields in the Viking Age that previously have been overlooked.

Body, scale and affectivity – reflections based on Viking Age imagery

Author: Prof. Anneli Nordbladh, Elisabeth, Dept. of Historical Studies, Gothenburg, Sweden (Presenting author)

Keywords: Affectivity, Body, Viking Age

Presentation Preference: Oral

In feminist research, the body is often highlighted as a central node, from which various relational perspectives are organized. In this paper, the question is raised on how the situated body relates to the affective affordances of the small and the larger than life sized object. Based on a case study of Scandinavian Viking Age miniature objects and rune stone imagery, the situated sensing and experiencing body will be discussed from a perspective of intersecting affective communities.

"Chercher la femme". Interpreting the late Iron Age record in Gaul

Author: F. Knyvry, Béaltrice, Bruxelles, Belgium (Presenting author)

Presentation Preference: Oral

Late iron age studies, by the very nature of the main written source, "Caesar De Bello Gallico", our modern western view of war, and periods of unrest and culture change, as well as the trend towards the interpretation of records through male directives of research strategies, mostly lead to geopolitical and economical models of culture change, and by a self-feeding process, overlook the clues enabling archaeologists to identify in the records, and therefore in future record, the missing links leading to alternative interpretations.

Indicative are the titles of the majority of classical archaeological monographs, "Le pas des legions", "Roman frontiers" (or non-defined genders given the neutrality of linguistic terms “the god of the Celts”, “Les Célestes”, “Celtic art”).

One could argue that in the process of synthetizing the new discoveries, in the long term historical interpretation, one might still easily miss the presence of females in archaeological contexts, and therefore their role in society, with implications in the long term historical interpretative framework and therefore in the building of contemporary ideology.

Indeed, interpretation of the status and role of females in society of a given period would rely on texts, inscriptions, figurative representations, burial types; as no indices appeared in northern Gaul LIA contexts, and their tangibility in other areas, on the basis of analysis of both sexual indicators and geographical distribution, could lead to conclude that lack of evidence is proof of absence, however this is no proof of non-existence, and criteria could be inferred from wider context in order to find missing links in further research.

For the purpose of sociological interpretation, bolder authors refer to classical historical records, as well as later testimonies, so that sociological discourse oscillates between myth and reality: mentions in later Celtic societies of great Britain, or poetical works, and occurrence of alternative roles, exemplified in the short episode of the revolt of Boudicca and her daughters, their subsequent destiny (and maintenance in the status of the dominated).
TH3-06 Abstract 01
A phenomenological turn in archaeological explanation: is it possible?

Author: Assoc. Professor Toonek, Tsori, National Institute of Archaeology and Museum - Bulgarian Academy of Sciences, Sofia, Bulgaria (Presenting author)

Presentation Preference - Oral

Archaeology borrows ideas from semiotics which in its reductionist variant sees symbolic features as passive signs that only through the act of mind acquire social value.

To improve archaeological explanation it should be studied the logic of how individuals and communities establish epistemic relations and how they create their own ontologies. I will provide examples of prehistoric symbolic behavior based on similarities not measured in distance and time but on how people perceive things.

TH3-06 Abstract 02
The making, the breaking and the remaking of the Greek Neolithic Community

Author: Consulting Prof. Pyrgaki, Marie, Hellenic Open University, Athens, Greece (Presenting author)

Keywords: community, prehistory

Presentation Preference - Oral

This paper explores the meshworks and examines their epistemologies for identifying the Greek Neolithic Community. Community and its constituent parts were continually being made, broken and remade over the year (Amit 2002; van Wees 2008).

The community acts as a meshwork for how people, things, feelings and ideas are linked by some kind of association. The last years have seen journals and conference papers with references to networks, bundless (Kneese 2003, 2009), Paquetat 2013), entanglements (Hodder 2011, 2012) and assemblages (following Deleuze and Guattari 2007; DeLanda 2006). This paper discusses the Ingold's idea of meshwork. Ingold (Ingold, In Lines 2017) takes inspiration from Deleuze and Guattari's idea of assemblages and he prefers the concept of a meshwork to describe the rhizomatic, living, co-creative entanglements of humans and other beings. Yet something, he stresses that knowing must be reconnected with being, epistemology with ontology, thought with life (Ingold 2011).
Entanglements of pottery acquisition strategies in the Mycenaean palace at Pylos

**Author**: Ziemann, Polin, Adam Mickiewicz University in Poznan; Institute of Prehistory, Poznan, Poland (Presenting author)

**Keywords**: Entanglements, Mycenaean culture, Pylos, Pottery production, pottery acquisition

Presentation Preference - Oral

Mycenaean economy has been a subject of numerous analysis, focusing mostly on various aspects of palatial redistribution, exchange and control system (Voutsaki and Killian 2001, Pullen 2010). The idea of the “palace”, which was supposed to be dominant in Mycenaean social and economic landscape, still constitutes the foundations of our thinking about the processes taking place in the Late Bronze Age Aegean. But in the meantime, many scholars have pointed out a clear duality in Mycenaean economy. It consisted of the “palatial” section, visible thanks to the archives of Linear B tablets, as well as “non-palatial” section, noticeable only by the archaeological remains and sporadically appearing in the archives (Shelmerdine and Palaima 1986, Bennett 2001, Knappet 2001, Whitley 2001, Gailey 2007, Nakassis 2015).

Within the broad subject of Mycenaean economy I would like to scope only on the one particular subject of pottery acquisition strategies in the palace of Pylos, narrowing the analysis only to the last period of its existence. The duality of Mycenaean economic system mentioned above, can be clearly seen and presented within that subject. The period LH II B, dated roughly to the 13th century BC (Shelmerdine 2008: 4), is the climax of Mycenaean palatial civilisation, containing most of available archeological remains. The palace at Pylos, after 300 years of development was by that time a complex, bureaucratic, administrative and industrialized structure (Wright 1986). It’s organisation and ways of controlling the society and economy were the subject of numerous papers and analyses, approaching this extremely wide subject with different perspectives and propositions (Shelmerdine and Palaima 1986, Voutsaki and Killian 2001, Gailey and Parkinson 2007, Pullen 2010). I would like to propose a combined model based on earlier papers. The strategy of palatial pottery acquisition system will be presented as, an again two-dimensional system, with two main pillars. Firstly, the pottery industry has been affected with the designation of the “royal” potter, who probably together with his co-workers or competitors listed on tablets, had become high-rank and specialized producers, cooperating with the palace, supporting the warans in fulfilling his duties and enjoying special privileges. The second pillar of the pottery acquisition strategy was obtaining all the other needed vessels through a taxation of various local workshops, existing in the town of Pylos and the internal part of the Hither Province of the state. I would like to present this model using the idea of entanglements, created by Ian Hodler (2012). Outlining the wide web of dependencies, between things and humans involved in Pylian pottery industry, will help to better understand its complexity and position in the Mycenaean community of Messenia.

Creating Locality: Place and Community along a Fen River

**Author**: Dr. Kohring, Sheila, University of Cambridge, Cambridge, United Kingdom (Presenting author)

**Keywords**: community, landscape, locality

Presentation Preference - Oral

How do you define “being a local”? Often this is an intangible concept wrapped up in a sense of community identity including an intimate knowledge of your social network and immediate environment. Embedded in this is a shared understanding of the time and history of a place. However, communities within a given landscape are in constant fluctuation and while certain features are the subject of numerous papers and analyzes, approaching this extremely wide subject with different perspectives and propositions (Shelmerdine and Palaima 1986, Voutsaki and Killian 2001, Gailey and Parkinson 2007, Pullen 2010). I would like to propose a combined model based on earlier papers. The strategy of palatial pottery acquisition system will be presented as, an again two-dimensional system, with two main pillars. Firstly, the pottery industry has been affected with the designation of the “royal” potter, who probably together with his co-workers or competitors listed on tablets, had become high-rank and specialized producers, cooperating with the palace, supporting the warans in fulfilling his duties and enjoying special privileges. The second pillar of the pottery acquisition strategy was obtaining all the other needed vessels through a taxation of various local workshops, existing in the town of Pylos and the internal part of the Hither Province of the state. I would like to present this model using the idea of entanglements, created by Ian Hodler (2012). Outlining the wide web of dependencies, between things and humans involved in Pylian pottery industry, will help to better understand its complexity and position in the Mycenaean community of Messenia.

POLITICAL STRATEGIES FOR THE EAA

**Wednesday, 31 August 2016, 09:00-13:00**

**Faculty of History, Room 329**

**Author**: Gransard-Desmond, Jean-Olivier, ArkéoTopia, une autre voie pour l’archéologie, Paris, France (Presenting author)

**Co-author(s)**: Karl, Raimund, Pafylgio Bangor University, Bangor, United Kingdom / Universitat Wien, Wien, Austria

**Keywords**: EAA, networking, politics

Presentation Preference - Round table

After two decades the EAA has by European archaeological standards become a very large organisation. At its Annual Conferences archaeologists from all over Europe and beyond meet, present their research and discuss professional issues. As much as words and writing can change the minds of people, the results remain theoretical and intellectual, but do have very little direct impact on the situation of archaeology and archaeologists.

Last year, during the annual meeting at Glasgow, speakers introduced different aspects of political strategies to inform and stimulate discussion. Among other conclusions, it became clear EAA needs to define and prioritise policy objectives and it was agreed that despite being a sizeable organisation, EAA would be too small by itself to achieve much, and thus would be well advised to find allies with shared goals.

This year, following an idea by late Jon Humble and Karl Cordemans we have invited the EAA Working Parties to share their experiences, and explore the potential for creating a network of overlapping interests and synergies especially when regards political strategies for the EAA.

We would like to look at three main objectives:

• to review the practicalities of operating an EAA Working Group. What is the collective experience?
• to consider the overlaps in working group aims and endeavour, thereby identifying common themes
• to draft a statement of intent on future collaborative working, with recommendations to the EAA Executive Board.

The Place and Importance of the Working Parties & Committees in the EAA

**Author**: PhD Yalman, Emine Nurcan, Cultural Awareness Foundation Istanbul

CIE-Center for International Heritage Ac, Istanbul, Turkey (Presenting author)

**Co-author(s)**: van den Dries, Monique, Leiden University, Leiden, Netherlands

**Keywords**: EAA, Strategies, Working Groups

Presentation Preference - Oral

The recent conflicts witnessed by the world have created a range of new dilemmas for the management of cultural heritage sites, museums, cultural artifacts and so on. Working Parties are one of the core elements of the EAA to produce knowledge, strategies and propose decisions about specific issues. There are positive and negative changes happening in the world and this fast rhythm of dynamism necessitates updating in the fields of archaeological practices, interpretations, documentations and protection measures. The Working Parties and Committees have crucial role in contributing to that updating process.

This form of organization enables members to express themselves, to share thoughts, and to create proposals. The outcomes of discussions within these groups are unequivocally important for the future of European archaeology. This presentation aims to remember the initial objectives of Working Parties and Committees within the EAA, what the current situation is and to discuss how to generate a network and connection between related Working Groups and how to appeal to the wider members to join these active smaller units.

Experiences from the Farming, Forestry and Rural Land Management Working Group

**Author**: Dr. Holyoak, Vincent, Historic England, London, United Kingdom (Presenting author)

**Keywords**: common agricultural policy, European Commission, rural

Presentation Preference - Oral

The EAA/EAC Working Group on Farming, Forestry and Rural Land Management has been active now for over 10 years. Its foundation and its subsequent work have been a recognition that, not only is the European Commission more active in rural policy
TH3-07 Abstract 03
The working group „Archaeology and Gender in Europe (AGE)“: views on the past and to the future

Author - Dr. Gunther-Schulmann, Doris, Freie Universität Berlin, Hamburg, Germany (Presenting author)
Presentation Preference - Oral

In 2009, the working group “Archaeology and Gender in Europe (AGE)” was started. It has as its area of concern the discussion of Gender issues in European archaeology, where gender is considered both as a structural element to be studied in the past and as influencing research in the present. It addresses the study and the understanding of gender arrangements in the past and the study and understanding of how current gender systems affect archaeology as an academic and professional practice.

Today AGE is a very active working group with 58 members from Europe and beyond (U.S., Iran), which is organizing sessions to gender-related topics at the Annual Meetings of the EAA. To make this sessions more sustainable, they should also be published.

With this paper, I would like to give a short overview over the actions of AGE in its first 7 years. As mentioned in the round table abstract, at the Annual Meetings of the EAA is much room for the presentation and discussion of research, but mainly in an individual perspective. Working groups can organize session within their topics, but besides that there is not much room for the presentation of their work and communicate what they have done in the year between two conferences: The small report working groups are asked to give at the Annual Business Meeting are mostly either cancelled or shortened.

Therefore, I would also like to present and discuss some ideas how the working groups can be more visible within the EAA, which could bring them on the one hand more active members, on the other hand can promote the collaboration between the different working groups.

TH3-07 Abstract 04
From Incident to Structure. Possibilities for a network of professional Associations within EAA

Author - MA MSC Mark, Spanjer, SAXION, Amsterdam, Netherlands (Presenting author)
Keywords: Advocacy, Political Strategy, professional archaeologists associations
Presentation Preference - Oral

Archaeologists have power, real power. The power to inspire; the power to bind people; the power to influence; the power to address and make change. We are perceived as interesting. We, ourselves and our work have a pull on the general audience and fellow human beings. Our potential “setting power” makes the average politician and activist drool. In the past 50 years we have incidentally used our influence to protect Cultural Heritage to great effect. EAA can look back on a series of successes where it was able to effect developments to protect Archaeology in Europe. But even with this in mind, generally speaking we as individual archaeologists or even as a group feel that we are politically speaking of little relevance, or even powerless. As long as the CPAA exists the committee has discussed, and outside our annual meetings at the EAA conference, the need to become more political active and more organized. Yes, as individuals we can achieve great results in influencing politics and decisions. But the general consensus over the years within CPAA is that we need a constant and structural stream of actions to influence laws, regulations and decision making in the field of Cultural Heritage at the seats of power in Europe. Individuals and national associations on their own will almost certainly not be able to operate with great effect on this stage. To achieve this structural influence, EAA seems an excellent possibility and “tool”.

In the last year it seems that the organization is moving towards a more active political role.

What would be needed to enhance EAA with a successful political machine? What would EAA need to fulfil that role? How would CPAA and other committees and working parties need to evolve to make this possible? This presentation would like to discuss some ideas. TH3-07 Abstract 05
Working Party (WP): Integrating the Management of Archaeological Heritage and Tourism

Author - Williams, Annemarie, Arnhem, Netherlands (Presenting author)
Keywords: Heritage, Policy, Tourism
Presentation Preference - Oral

The aim of any WP should be to avoid overlap in sessions and create synergies between sessions with related topics; to put a certain topic the agenda of the EAA; to create a dialogue amongst the EAA members and with representatives from other relevant disciplines outside the Association if we don't want our comments to remain unnoticed in an "archaeological vacuum". A WP could form a link to the outside world, mouthpiece on certain topics that are important for archaeology but relevant to other disciplines as well. A WP can make connections and control the topic within the expanding organization of the EAA. It is clear that with the growing number of sessions and papers the scientific and local organizing committee don't have a clear oversight. It would be interesting if the WP's could form two-way bridges where information on specific topics can be brought outside our EAA bubble, and other ideas and thoughts can also reach us, always with the archaeological interest at heart.

Our WP explicitly invites participation and input from all stakeholders that are involved in archaeological tourism and strongly support a multi-disciplinary approach. In an ideal world the archaeologist plays a central when an archaeological site is developed for touristic activities. This is however not always the case and in order to achieve change we will invite other stakeholders that aren't EAA members to join our WP and participate in our meetings and sessions and the EAA members of this WP will take part in other conferences and more prominently become part of the decision making processes that concerns archaeological tourism.

TH3-07 Abstract 06
Public archaeology is a martial art

Author - Dr. Richardson, Lorna-Jane, University of Umeå, Umeå, Sweden (Presenting author)
Keywords: politics, public archaeology, UK
Presentation Preference - Oral

Public archaeology in the UK deals with politics, power and inequalities, and aims to explore the impact of archaeology in present day social and political landscapes. Can this work in practice during a period of unprecedented cuts to government budgets covering heritage issues? This paper will explore how our work affects political decisions and whether archaeology be used as an instrument of policy and politics. Can political activism be part of our professional work, and is this ethical?”

TH3-07 Abstract 07
EAA and Politics: role and potential of the non-permanent Working Parties and Committees

Author - Dr. Hüglin, Sophie, Newcastle University, Basel, Switzerland (Presenting author)
Keywords: Politics, Professionalisation, Working Groups
Presentation Preference - Oral

Apart from the scientific exchange EAA's Annual Conference always has been also an important opportunity to discuss and engage in political topics. For groups who want to meet regularly and work on long term issues the EAA offers the possibility to form a Working Party or Committee. Currently the EAA has more that ten active Working Groups (http://e-a-a.org/working_groups.html), who meet in Round Tables during the Annual Meeting and give a short report on their activities at the Annual Members Business Meeting. Some of them even report on their Round Tables in TIA.

Working Groups are very different regarding their topics, but also in the way they work. With the EAA having increased considerably in members and becoming more professional the Working Groups should become more part of the decision making processes of concern archaeological tourism.

What would be needed to enhance EAA with a successful political machine? What would EAA need to fulfill that role? How would CPAA and other committees and working parties need to evolve to make this possible? This presentation would like to discuss some ideas. TH3-07 Abstract 08
Politics, Professionalisation, Working Groups
The material record naturally lends itself to long-term perspectives. In few areas is this as apparent as the study of technology, which has historically been closely intertwined with the disciplines of archaeology and anthropology. But has our focus on the material record, and our understanding of the past, driving us to frame change in a developmental sequence and omitting those parts of the picture which do not accord with this ‘single story’.

We argue that evolutionary assumptions are still prevalent in many areas of archaeological research, regardless of whether or not they are made explicit. While there is undoubtedly a place for such models, they can also have negative effects on our understanding of the past, devaluing the parts of the story which have historically been closely intertwined with the disciplines of archaeology and anthropology. But has our focus on the material record, and our understanding of the past, driving us to frame change in a developmental sequence and omitting those parts of the picture which do not accord with this ‘single story’.

This is particularly true, we suggest, of the archaeology of technology. A key problem is that we have no clear archaeological definition of ‘technology’. In modern English, the term generally applies to the cutting edge of a given period; that is, to novel practices or products only. Longer-lived technologies, particularly those involved with animal-rearing and food production, are rarely considered in the same breadth as pretechnologies, despite their often global impact.

Without doing away with narrative approaches altogether, we can nonetheless benefit from a more complex and thorough handling of the archaeology of technology, which acknowledges the diversity of past practices and leads us to a closer understanding of where and how the material and the social worlds meet.

Archaeology excels at locating patterns in the distribution of material culture and interpreting the behavioural practices associated with these artifacts. However, in order to do this, we are often required to homogenise data towards ‘norms’ that will fit macro-scale narratives about prehistoric lifeways. Often the variability underlying the complexity of social networks is ignored when, in fact, it could provide insight into the dynamics of how change at the macro-scale occurs. This paper explores how analysis of technical variability can be beneficial in assessing how knowledge is networked within communities and how it articulates with wider social and technological traditions. In particular, it uses Late Neolithic, Copper Age and Early Bronze Age pottery technology to assess how the analysis of variability (rather than the LACK of variability) opens up questions on how social change occurs and becomes sedimented within local communities.
The paper starts from the premises that, most often, the ancient written sources were given less attention from the perspective of technical information they might provide. The details concerning the dating, geographic location and the correlation with already known historic events was considered essential and, unfortunately, most often insufficient. In addition, specialists capable to read in the original language the ancient sources might not have been always familiarized with the principles of ancient science. Due to these causes, many of the stories concerning the beginnings of technology remained untold. We might have proof that a certain principle or method were applied, but we do not know HOW. Our presentation proposes a re-reading/re-analysis of the work Expositio et Ratio Omnium Formarum, dating most probably from the first decade of the 2nd century AD, and preserved in fragmentary copies from the 6th and 9th centuries. Taking the shape of a letter written by a certain Balbus and addressed to a certain Celsus, the work contains numerous data of topographic nature, including the mentioning of certain military survey applications. These latter ones present a particular interest. For example, the determination of the widths of a river that had to be crossed or the height of a fortification that had to be conquered "without venturing within bowshot of the enemy" (M.J.T. Lewis) led to the development of ingenious methods. Although the volume is often cited, the accent on the politico-military conjecture prevailed, to the detriment of the technical information it provided, which was neglected. Our presentation will analyze exactly these neglected aspects. We will approach Balbus' text at three interrelated levels. Firstly, we will try synthesize all the mathematical knowledge that Balbus possessed at the time. Then, strictly based on these, we will try to reconstruct the methods and, implicitly, the instruments that might have allowed the performance of the three military survey applications that Balbus mentioned in the text. The reconstitution of the methods and instruments will be integrated in the historical context of the original text, by evoking a contemporary personality, that of Heron of Alexandria, which brought numerous contributions to the technical field, including that of topographic measurements, with his paper Dioptra. Finally, we will try to discover more about the persons behind the analyzed text (Balbus and Celsus), who, most probably, "were people outside the upper classes and the governing group which traditionally provided most of the evidence that comes from literature" (Brian Campbell 1996).

**TH3-08 Abstract 06**

Tin presence in Geto-Dacian silver coins as revealed by XRF and micro-PIXE – a possible explanation

**Author** - Dr. Constantinescu, Bogdan, National Institute for Nuclear Physics and Engineering, Magurele-Ilfov, Romania (Presenting author)  
**Keywords:** geto-dacian coins, silver, tin  
**Presentation Preference - Oral**

Geto-Dacian silver coinage - "Celtic" type starting with Philip II tetradrachms imitations – is active from end of fifth to beginning of 1st Centuries B.C. A spectacular aspect is the presence of tin in these coins starting with 1st Century B.C. It is logic to suppose that tin was deliberately and gradually introduced. The average fineness and the average weight of the issues corroborate the supposition. There is a reduction of the fineness with the time that is specific to almost every Geto-Dacian coin issue. Tin concentration in coin increased with the time - at the beginning of 1st Century B.C. It was more or less proportionally to copper concentration. This could suggest that tin and copper were mixed in Geto-Dacian silver coinage. A very high correlation is not expected because the ratio Sn/Cu in ancient bronzes is far from being a constant. The preference for adding tin in Ag/Cu alloys is due to the fact that tin attenuates the red color of copper, resulting a silverly nuance of the alloy. A similar situation is repeated in modern times, and des monnaies d’argent d’origine étrangère à la Galle avant la conquête », 2002, PhD thesis, Université Paris-Sorbonne - coins from 1st Century B.C. emitted by Coriosolitii having Ag=24%, Cu=66%, Sn=9%, Au=0.1%, Pt=0.5% (medium values), in M.F. Guerra and Ph. Abolivier, “Monetary alloys in Iron Age Armenia: the singular case of the Osismi tribe” - Ag=60%, Cu=28%, Sn=10%, Au=0.4%, Pt=0.6% and in J. Corsi et al, “Compositional analysis of a historical collection of Cisalpine Gaul’s coins kept at the Hungarian National Museum”, J. Anal. Spectrom. 2015, 30, 730-737 - Ag=22%, Cu=66%, Sn=9% (medium values). It is a Celtic procedure generalized in 1st Century B.C. from Bretagne and Northern Italy to Romania? This is the question. A possible "metallicity" explanation related to 279 B.C Celtic Delphi defeat is discussed.

**TH3-08 Abstract 07**

"Yes! We’re all individuals!" - I’m not": Clusters and the singular in the chemistry of copper-alloys

**Author** - Dr. Peter, Bray, University of Oxford, Ruskil, United Kingdom (Presenting author)  
**Keywords:** Chemical analysis, Copper-alloys, Object life histories  
**Presentation Preference - Oral**

The chemical analysis of prehistoric metal is one of the longest ongoing scientific experiments in the world. Beginning with the pioneers of organised chemistry and archaeology, around 100,000 artefacts from the European Bronze Age have now been investigated. These composition sets are typically interpreted through the lens of "grand narratives": the provenance hypothesis, a broad sequence of alloys, statistically lumping analyses into groups, or simplistic routes of exchange. These schemes are increasingly at odds with current archaeological concerns such as the fine-scale performance of identity, value, and the agency of individual people and objects. The grand narratives are beginning to become strained from a chemical perspective as well. Recent research at the University of Oxford has emphasised the subtle variations in chemical composition caused by a unit of metal’s unique story. Quants of metal can pass through a number of forms, merge with others, be reworked, used, and decorated over time. Many of these processes will leave chemical and isotopic marks that can be interpreted by comparison with contemporary artefacts. In short we are aiming to develop a system of relative chemical interpretation for copper-alloys. This paper will give a series of cases studies where a fresh look at old data can reveal individual technological and social stories, within the broad sweep of European Early Bronze Age metal use. These include individual workshop choices, rare chemical signatures that demonstrate the production of small axes from recycled daggers in England, and strange local patterns that were caused by melting and recasting centuries old metal in the south of Ireland.

**TH3-08 Abstract 08**

A more efficient means for going backward?

**Author** - Dr. Fothergill, Tyl, University of Leicester, Leicester, United Kingdom (Presenting author)  
**Keywords:** Animal husbandry, Technology, Theory  
**Presentation Preference - Oral**

Theoretical examinations of relationships between human and non-human animals in the past are few and far between. There is a clear scholarly focus on concepts such as “exploitation” of species, “disposal” of remains, and a generally unilinear approach to domestication. Past animal husbandry is broadly viewed as a component of agriculture, and conceptualized as temporally progressive, ever approaching an ideal economically-efficient means of production. When a trend in quantitative data fails to follow this model (as an example: a decrease in the size of cattle in Britain after the 5th century AD) it is relatively investigated and cultural factors may be implicated (e.g. Roman withdrawal from Britain). Whilst such factors may be partly responsible, only certain lines of archaeozoological evidence (sex ratios, mortality profiles, metrics) are employed to draw conclusions about activities and practices undertaken by a range of practitioners across a large and varied social landscape. Is it more likely that cattle became smaller after the Romans left Britain because the Britons lacked the knowledge and skills to husband them in the most productive way, or that indigenous cattle breeders simply lacked the resources and connections to a network which had been available to them during the Roman occupation? Could there be other factors at work? Such questions cannot be addressed in a comprehensive and nuanced manner by comparing a few strands of quantitative data, and a more flexible theoretical approach is warranted. Technology has been part of the toolkit of archaeological thought for centuries, and does not merely equate to tool use. Manufacturing practices which leave a clear archaeological signature are recognised as technologies. Animal husbandry is no different in that it is a continuous process, a work of creation and amendment over time, which is subject to alterations in knowledge, skills, and practice. Approaching the idea of animal husbandry as a technology would allow for: the incorporation of multiple strands of evidence at different scales; a recognition of an array of activities as part of practical processes; inclusion of social and cultural factors such as gender, status, and identity; animals to be considered as potentially agentic; and the tantalising prospect of examining the dissemination of animal husbandry knowledge through systems of human networks.
Digging democracy

Author - Svedberg, Stig, Kulturandskapet, Fjällbacka, Sweden (Presenting author)
Co-author(s) - Ostlund, Arinka, Kulturandskapet, Fjällbacka, Sweden
Keywords: Cooking pits, Environmental archaeology, Sample strategies
Presentation Preference - Oral

Archaeology has been used as part of the history about the national state. Still today this story is being retold, many times uncritically. At the same time we as archaeologist must admit that we also often retail the big linear story. A mound is given higher priority than smaller more insignificant graves, a settlement area with longhouses more than a site with cooking pits but no postholes. By systematically choosing not to excavate peripheral sites, small sites, and temporarily used sites we create a history of central places and big men. This is an undemocratic way of conducting archaeology.

We propose a democratic archaeology, regarding methods, sites and people. In our scientific research programme we decided to apply new methodological and archaeological sites so that they can be a part of our history. This includes, for example, carefully choosing the excavation methodology, and to supplement the collection of finds with scientific analysis in order to actively search for the stories of the people that didn’t have the power to erect stones or mounds.

Before the excavation of the site Tanum 1821 a strategy for sampling the site and structures, especially cooking pits, was formulated. A sampling of the surface was performed in relation to the structures. From excavated structures the section was sampled by a continuous grid and consisted of ten to twenty samples from each structure. These samples were used for geochronological analyses, mainly phosphate, magnetic susceptibility, loss of ignition and lipid acids. These samples were supplemented by samples for macrofauna and radiocarbon dating. The ratio between large and small fire-cracked stones were calculated.

By combining these analytical methods we can conclude that cooking pits are complex structures. The cooking pits on the site could be subdivided into three categories, of which one were used for processing grain. By combining these results with a landscape analysis, including other settlement sites, place names and natural preconditions, we could interpretate the site as an activity area used for the processing of grain.

The site can be interpreted as a peripheral site (now and then) but important for the society. Peripheral sites are also sites beyond control. In such a place can, for example, subversive thoughts and discussions be performed. This is sites were monuments and mounds won’t be erected, but instead represents other parts of the society.

We want to tell other stories. To be able to do that we need to excavate more peripheral sites and use more diverse methods. More people of the past must be given a chance to be heard. Diversity and variety is an important part of a democratic archaeology. If all voices shall be heard we must also acknowledge them, in prehistory as well as today.

Technological variability of pottery in long-term perspective: a case of the Neolithic settlement

Author - Kielina, Petr, Institute of Archaeology CAS Prague, Prague, Czech Republic (Presenting author)
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Co-author(s) - Neumannova, Klara, Institute of Archaeology CAS Prague, Prague, Czech Republic
Keywords: modal mineralogical analysis, Neolithic, pottery technology
Presentation Preference - Poster

This poster comprises results of a technological analysis of pottery from the large Neolithic settlement site in Bylan, located in the Kuhna Hora district in the Czech Republic. This project is based on a complex methodology with the aim of identifying the degree of variability of the technological chains and of interpreting the relationship between the technology and social environment of the settlement. The technological variability is being examined in relation to the chronological diversity and the spatial patterns of the site.

Macroscopic analysis establishes a grid of categories into which the observed phenomena are sorted. By using this approach there will always be some specific groups of pottery. In many cases, however, we do not know the real nature of these groups. Are there different groups of pottery that reflect the distinctive technological traditions of specific chronological phases or are there only continual variability together with one or two broad concepts regarding paste recipes? These are basic dichotomies that we cannot resolve without having the possibility to reliably quantify the differences.

The question is, what are our possibilities in regard to mapping the technological variability on a quantitative basis. The human senses represent very powerful analysers and their “feelings” can capture complexly based or subtle differences between the sensual qualities of observed objects. For validating these “feelings” we need accurate quantitative data. Standard thin-section petrography can only partially solve this problem. Semi-quantifications are either time-consuming or subjective - depending on the observer’s experience.

A possible solution to this problem lies in a new advance in scanning electron microscopy that enables automatic modal mineralogical analysis that constitutes an accurate estimation of the distribution and the volume percentage of a mineral within a thin section.
Late Neolithic settlement of Stav, Syria. The settlement was extensively excavated by the German Archaeological Institute and represents one of the few explored sites of this period in the northern Levant. It has a rich stratigraphic sequence which covers nearly a thousand years. So-called individual single-room houses coexist with 'special' multi-room buildings, singular grinding equipment with whole sets for 'collective' food processing, and isolated vessels with large storage rooms or buildings. The chronological sequence of the architecture and the contexts and evolution of grinding stones suggest a transition from individual to communal consumption and a possible coexistence of social behaviors related to food consumption. Furthermore, the very early production and use of pottery accentuates these processes.

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TH3-09 Abstract 03

Review of social structure in the Late Neolithic through the ritual activities and related materials

Author: Dr. Erdem, Deniz, Middle East Technical University, Ankara, Turkey (Presenting author)

Keywords: Late Neolithic, Ritual, Social structure

Presentation Preference: Oral

The Late Neolithic Period is named as Haifa Period in North Mesopotamia (8000-5200 BC) and it falls between the Neolithic Transition (c.10500-7000 BC), and the Urban Transition (c.4000-2500 BC). Therefore, the time period is traditionally perceived as an important stage in the evolution of central authority and ritual and economic centralization that was the hallmark of the first city-states. The architectural structure and regional settlement patterns usually indicate a non-hierarchical organization that appears to be centered upon extended-households related through kin relations. Yet, it has been difficult to understand how these extended-household groups regulated their social relationships with other groups. Within an alternative theoretical approach, this study reviews the space-object-person relations of the time period through analysis of the material culture, related ritual activity and settlement patterns in an attempt to draw a picture of social trends during that period. Following this, the significance of ritual activity is evaluated in context of these trends to understand the patterns of social change. At the same time, ritualized burial of artifacts, places and buildings may be a factor that prevents 'alienation of objects' and thus accumulation of personal or group capital. Such perceptions may have also been instrumental in the emergence of new alternatives for recording and manipulating social history.

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TH3-09 Abstract 04

Food preparation, commensality and the formation of social cohesion in Late Neolithic Northern Greece

Author: Lyperakis, Maria, Democritus University of Thrace, Eleftheroupoli Kavalas, Greece (Presenting author)

Co-author(s): Cioros, Konstantinos, Democritus University of Thrace, Komotini, Greece

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Keywords: Food preparation, commensality, Late Neolithic, pottery and spatial analysis

Presentation Preference: Oral

This paper focuses on the evidence for collective and domestic solidarity present in Late Neolithic settlements of Macedonia, Greece as revealed by the analysis of cooking pots and cooking facilities from two settlements, Ssarouppoli (Thessaloniki) and Toumba Kramati (Kozani). Focused on the typological characteristics of cooking pots, namely their size and shape, in combination with the evidence of cooking facilities it is possible to define more clearly some close connections between groups or ‘households’. The size of cooking pots in Ssarouppoli provide evidence for domestic preparation and consumption of food while in Toumba Kramati Koiladas the context of consumption of food must have been on a more public level. Subtle differences and similarities between houses underline the central role that food preparation holds in forming social ties. Furthermore, the regular presence of pottery in public consumption of food is connected to the formation of social cohesion within Late Neolithic communities. Pottery evidence, offers a powerful tool for understanding the extent to which food preparation and commensality contributes to the communal sense of belonging in Late Neolithic Macedonia, Northern Greece. The paper examines the spatial organization of material culture associated with preparation and consumption of food, as well as the close connections between groups or ‘households’. Based on pottery evidence for the preparation and consumption of food, cooking and commensality contribute to the development of a sense of belonging to a community or to smaller groups within a community. Furthermore, the location of cooking facilities in relation to houses will be taken as an indication of the role of the preparation of food in forming social relationships. Pottery, including cooking pots, and evidence of public consumption of food will be used to illustrate how eating could have contributed to the formation of social cohesion within Late Neolithic farming communities.

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TH3-09 Abstract 05

Social cohesion among Tripolye populations: evidence versus hypotheses

Author: Dr. Dziachenko, Aleksandr, Institute of Archaeology of the NAS of Ukraine, Kyiv, Ukraine (Presenting author)

Keywords: settlement hierarchies, social cohesion, settlement structure, household

Presentation Preference: Oral

This paper examines the evidence and hypotheses regarding social cohesion among Tripolye populations, discussing social interactions at the following spatial tiers: house and household, settlement, micro-region, region and supra-region. In this respect emphasis is placed upon Tripolye site hierarchies and settlement structures.

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TH3-09 Abstract 06

The importance of collective aspects in megalithic building in Neolithic Europe and recent Indonesia

Author: Wunderlich, Maria, Christian-Albrechts University Kiel, Kiel, Germany (Presenting author)

Keywords: Funnel-Beaker, Megalith building, Social Cohesion

Presentation Preference: Oral

One challenge of research connected to megalithic monuments is the inclusion of the concept of social cohesion into the social interpretation of given examples of the 4th and 3rd Millennium B.C. throughout different parts of Europe. Funnel-Beaker societies in Northern-Central Europe are providing a rich base of megalithic tombs, with a number of several thousand monuments built in the modern areas of Germany, the Netherlands, Denmark and Sweden. Megalith building traditions can be found in a number of archaeological, historic and recent societies scattered over Europe, South America, Asia and Africa. One of the last remaining places with a recent tradition of megalith construction is the island of Sumba in Indonesia. This ethnographic case study shows how collective efforts in building practices are by and large seen as important

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TH3-09 Abstract 07

The Boyne Valley, eastern Ireland – the epicentre of a Neolithic ‘super-ordinate’ identity?

Author: McNeilly, Thor, NUI Galway, Galway, Ireland (Presenting author)

Keywords: Bronze Age, Neolithic, Social cohesion

Presentation Preference: Oral

This paper explores the importance of the Boyne Valley Co. Meath, eastern Ireland in the construction and negotiation of group identities in the late 4th and mid-3rd millennium BC. The construction of substantial passage tombs at Dowth, Knowth and Newgrange indicates the potential significance of the Boyne Valley in the conception and mediation of large-group identities during the Middle Neolithic. It will be advanced that the sources of materials utilized in the construction of these monuments and the distribution of contemporary sites across eastern Ireland provide information about the scale and geographical extent of the groups involved in these construction projects in the later 4th millennium BC. The act of building will be considered from the perspective of strengthening group cohesionfulness prior to the occurrence of large-scale gatherings at calendrically significant times of year. Evidence for Late Neolithic Grooved Ware associated feasting at Newgrange confirms the continued significance of the Boyne Valley in the constitution of large-scale group identities during the mid-3rd Millennium BC. An overview of evidence supporting the theory that large-scale winter solstice associated feasting took place at the site will be presented. A working hypothesis about the phasing of the activity will be outlined and estimation of the numbers involved in feasting at the site will be advanced. The significance of different scales of feasting event will be considered, and finally, the importance of calendrically scheduled winter solstice gatherings in the reinforcement of group identities will be discussed.
Building and Burying Together to Stay Together

TH3-09 Abstract 08
Author: Prof. Miller Bonney, Emily, California State University Fullerton, Long Beach, United States of America (Presenting author)
Co-authors: R. K. Merton, R. H. Merton
Keywords: collective, Crete, tomb
Presentation Preference: Oral

This paper argues that the construction of collective tombs at the beginning of the Bronze Age on Crete constitutes an example of building and burying to effect social cohesion. At the end of the Neolithic the early population of Crete dispersed across the island, yet evidence for durable settlements dated to this period, with the exception of the major sites of Knossos and Phaistos, remains scarce. Rather the social cohesion of these clusters of people was promoted through the construction of monumental collective tombs. With diameters of at least five meters the tombs were built of massive boulders the collection and transport of which to the site of the tomb required collaboration and social organization. The first tombs, which would have looked more like mounds than the cylindrical structures often portrayed in reconstructions, evoked the caves in which the Neolithic population lived and buried their dead and some of which remained in use during the Early Bronze Age. Having relocated to areas which lacked caves - and particularly to the south central part of the island - the settlers recalled their places of origin as a means of maintaining social unity. Although some have argued the tombs were built for the elite, burial goods were generally modest, two to three pieces of pottery and perhaps a personal item - and the overall impression is that the mortuary practices were intended to bind the community together. There is no evidence in these early tombs for any individual receiving special attention. Instead it appears that every member of the group received the same treatment at the time of internment - deposition on the ground accompanied by a few objects. Bodies piled up over time, the desiccated remains swept to the side or long bones and skulls selected while the rest were removed. Some 400-500 years after the tombs were constructed the population finally constructed more substantial settlements that nevertheless remained visually proximate to the cemeteries which continued to serve the role of enhancing social cohesion. This role persisted throughout the Early Bronze Age as the emergence of a more robust built environment evoked the addition of anterooms to pre-existing tombs and the construction of more architecturally defined new tombs. Only the emergence of a supposedly palatial culture at the transition into the Middle Bronze Age supplanted these tombs as an important mechanism for social cohesion.

Looking for a spa? A social cohesion at Santovka - case study

TH3-09 Abstract 09
Author: Mrg, PhD Bača, Martin, Department of Archaeology, Faculty of Arts, Comenius University, Bratislava, Bratislava, Slovakia (Presenting author)
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Keywords: religion, Slovakia, springs
Presentation Preference: Oral

Santovka (formerly known as Maďarece) is an Early Bronze Age - tell type settlement at southwest Slovakia. It is surrounded by thermal springs which are famous for their salubrious qualities. An ongoing excavation project (currently 8 excavation seasons) uncovered a medium-sized fortified site, with exceptionally high number of prestigious artifacts of exotic origin and clear evidence of extensive metalworking activities. Ceramic production and consumption is pretty much heterogeneous, with predominating elements of so called mađarovce, encrusted wares and ostenia culture ceramic traditions. The character of uncovered finds as well as geographical and climatic position of the site suggests, that Santovka was a place, where identities were able to merge, transform as well as maintain their distinctive character. These processes were obviously dependent of proper social cohesion. We therefore welcome this topic of this paper, because we believe, that Santovka offers a nice example of a site, where theoretical models related to subject of social cohesion could be studied and applied. We suggest, that local thermal springs were a natural place of healing (solidarity) as well as religious (social integration) qualities and therefore of a supra-regional importance. If we accept the healing as a background for social cohesion on subconscious level, than other shared ritualized activities are not so different. Moreover, the process of hunting and grain storage could play a similar role. In this paper we will present the site in context. Our methodology for studying social cohesion will be based on theoretical models influenced by studies off R. K. Merton and his followers. We will use these models for postulating hypothesis based on artifacts and observed archaeological events and environmental conditions.

Collective harvesting at Százhalmobatta-Földvár, Central Hungary: a material cultural perspective

TH3-09 Abstract 10
Author: Halbrucker, Eva, Leiden University, Delft, Netherlands (Presenting author)
Keywords: Bronze Age Hungary, harvesting, sickle blades, chieftain, power-centre, collective activity, social relations
Presentation Preference: Oral

The studies on Bronze Age Italy have underlined the existence of differences in the apparent social homogeneity of communities. The terramara society has been singled out as an example of social cohesion and homogeneity, thanks to its regular settlement pattern and repetitiveness of house sizes, but also to its "economic" funerary representation and to the widespread infrastructure investment in water channels and fields, as well as in material culture. On the contrary, Southern Italian communities have been described as more hierarchical and socially divided communities, exposed to the Mediterranean wind of inequality coming from the Aegean and the East. Anyway, the patterns of social disintegration in reaction to the Late Bronze Age crisis show that the collapse of the terramara system was more radical and extreme than the limited rearrangement suffered by the Southern Italian societies.

Anyway, it is also interesting to deconstruct this view of (ancient) societies, in order to understand how far our research traditions have fossilized our understanding of the past.

Take an image, it’ll last longer:

Mycenaean multimediality, prestige, and competitive conformity

TH3-09 Abstract 12
Author: - Thaler, Ulrich, German Archaeological Institute, Athens, Greece (Presenting author)
Keywords: Bronze Age Italy, social cohesion, social disintegration
Presentation Preference: Oral

The inherently, literally built-in segregative nature of Mycenaean palaces as the seats of political authority and the role of palatially sponsored feasts, held amongst others at the palace itself, as a means of creating a shared identity and thus fostering social cohesion have been key topics of Mycenaean archaeology for the past two decades. The proposed paper seeks to further highlight the link between creating a common identity and promoting cohesion in the sense of conformity. Beyond 'making images', it is also interesting to deconstruct this view of (ancient) societies, in order to understand how far our research traditions have fossilized our understanding of the past.

Sickles are common finds at the site of Százhalmobatta-Földvár, where they are the main chipped stone tool type during the last major occupation of the settlement (1700-1400 BC). However, sickle blades are reason rare finds in other Bronze Age sites from the valley (Priskin 2014). This information suggests harvest was a centralised activity controlled by Százhalmobatta-Földvár. Thereby, harvesting (and sickles) could have been organised among social relations, and could help to keep alive these associations.
TH3-09 Abstract 13

Ritual feasting as indication of social cohesion?
A late Bronze Age case study from Romania

Author - Prof. Dr. Metzner-Nebelecek, Carola, LMU Munich, Munich, Germany (Presenting author)
Co-author(s) - Prof. Dr. Nebelecek, Louis, Kardinal Stefan Wyszynski University, Warsaw, Poland
Keywords: ritual, feasting, Bronze Age, cohesion, competition
Presentation Preference - Oral

The talk will focus on ritual feasting in the late Bronze Age site of Lapus in Northwest Romania. As a result of an international excavation and research project (Chair for Pre- and Protohistory, LMU Munich, Germany; Maramures County Museum in Baia Mare, RO; Archaeological Institute, Kardinal Stefan Wyszynski University Warsaw, PL) a monumental, multi-period cult building was uncovered. In each phase a large hall with a central hearth was deliberately destroyed by fire after a period of use and subsequently covered with a clay mantel, on top of which the next hall was erected. Outside those buildings large quantities of pottery vessels of various functions – ranging from storage vessels to delicate cups - have been found. We interpret them as the remains of feasting events of a larger group of people. In accordance with the common interpretation of feasting like creating group identity and cohesion within society we also see oppositional aspects represented in Lapus. As a result of excavations in the past and recent surveys within the project several contemporary or supposedly contemporary barrows with traces of comparable structures were detected. Thus ritual feasting in Lapus may also have functioned as means of competition among different families and an indicator of social distinction and a display of wealth and power.

The paper will address aspects of ritual behaviour on a theoretical as well as evidence based level.

TH3-09 Abstract 14

Do swords make warriors? Identity & cohesion among armed individuals in the European Bronze Age

Author - Nottorf, Jens, German Archaeological Institute, Berlin, Germany (Presenting author)
Keywords: Bronze Age, swords, warriorhood
Presentation Preference - Oral

With the rise of the Bronze Age in Europe it seems that the sword as new and innovative weapon suddenly became assigned an importance beyond its mere role as armament. A specialized group referred to as elite warriors/ in research tradition seemed to have been drawn a certain status from their peculiar role within a social system developing complex group identities and heavily drawing on cohesive communities. In the course of this paper the warrior’s sword will be discussed as tangible (yet not exclusive) manifestation of such a group identity – apparently uniting (and dividing?) different levels of (functional) role and (social) status of Bronze Age warriorhood with a closer look at the weapon’s changing expression in funerary ritual and deposition tradition of the Nordic Bronze Age. In the end the emblematical role of the sword symbol (respectively its substitutes) in the constitution of group cohesion among individuals armed with and represented by a sword in Bronze Age Europe will be further explored.

TH3-09 Abstract 15

Social cohesiveness as concept of habitus through the lens of archaeological record

Author - Pape, Eleonore, German Archaeological Institute, Frankfurt am Main, Germany
Co-author(s) - Uhl, Regina, Eurasia Department of the German Archaeological Institute, Berlin, Germany (Presenting author)
Keywords: 3rd Millennium, habitus, social cohesion
Presentation Preference - Poster

Social cohesiveness can be expressed, created and maintained through a variety of ritualized (and/or) performative events which can respectively involve different group constellations that constitute society.

Following Bourdieu’s concept of fields and habitus, we choose to focus on the entanglement and juxtaposition of different group identities at different levels, expressed through distinctive sets of material culture and features. Our experimental approach shall be applied to various case studies of the 3rd millennium BC in Europe from a cross-border macro-level to a multitude of local micro-scale units.

TH3-10 Abstract 01

Linear Pottery houses and their social context

Author - Dr. Zych, Renata, Biegłowa Tyńcze, Poland (Presenting author)
Keywords: houses, Linear Pottery, society
Presentation Preference - Oral

The population of Linear Pottery culture constructed stave houses in a rectangular fashion. They were not only in large settlements, but small settlements as well, consisting of one house and few related utility features. The construction of the houses was noticeably uniform.

The architecture of the houses depends on technical ability, but also on the cultural traditions of a given social group. The house is suited to people from that particular group, and therefore must materialize the group’s common thought images that form the basis of its identity. Outlined here is the problem of the house as a phenomenon of forming society. Subjects of study included Linear Pottery houses in the territory of Poland.
strong oral histories and practices designed to prolong the memory of successive generations of inhabitants of these buildings. As such, the houses themselves (their fabric and their spatial organisation) appear to have been central to the construction, maintenance and renegotiation of household identity in later prehistoric Europe, as glimpsed through various ethnographic examples in the more recent past.

TH3-10 Abstract 04
Pottery as personal belonging in a Clarisses convent in Vilnius

Author - PhD student Urbonaiti-Ubi, Miglė, Vilnius University, Lithuania (Presenting author)
Keywords: historic archaeology, household, pottery
Presentation Preference - Oral

Pottery is the most common artefact in excavations of historic sites. Due to vast number of fragments pottery is often identified as mass artefact. Nevertheless, some early modern period pottery in Europe can be associated with personal needs and usage. Pottery with scratched marks such as initials, religious abbreviations, letters or numbers or unidentified scratches are found from for example in the Netherlands and Germany. These marks are assessed as a personal design of the owner. Most of these marked pottery fragments are uncovered from monasteries and convents. This fact leads to an interpretation that monks and nuns possessed their own ceramic dishes while in most cases private property was forbidden.

In a convent of Clarisses in Vilnius Ožigiai street (Maironio street 11) 10 fragments of marked ceramic dishes from the end of 17th to beginning of 18th century were uncovered during the excavations in 1994 and 2007. These dishes had only marks of letters or numbers. The observation which things were left behind or even don't appear in the archaeological record allows statements about the end of occupation. Life in Convent Grad took place in a time of far reaching cultural change. Written sources provide little insights in the situation of common life. In combination with the archaeological record they allow to delineate the possibilities of household-organisation for a specific historical situation.

The talk will examine if it is generally possible to work with the household concept if there are unpecific structures or if it is rather necessary to apply it to gain more information. With regard to cultural formation processes this also raises the issue of the possibility to detect pauperism archaeologically. For this purpose it will present the archaeological remains of a specific small house and compare it with the normal course of life in early Byzantium known from historic tradition.

TH3-10 Abstract 05
House and Household – an archaeological approach

Author - PhD Tagesson, Göran, Swedish National Museums, Linköping, Sweden (Presenting author)
Keywords: early modern period, household, houses
Presentation Preference - Oral

The household is commonly identified as a fundamental element of social organization in past times. In archaeology, the household has often been regarded as an essential level of research, in order to bridge the gap between grand theories of cultural change and the practical archaeology on the ground. Theoretical discussions as well as analyses based on empirical observations nowadays tend to take place in dynamic interactions where the household is understood in different ways, sometimes even as something much different from a static social structure. New approaches tend to combine social organization and agency with spatial and material dimensions. The household as a unit for organizing production, property and consumption is confronted with the household as ideology, discourse and manifestation. The relationship between the physical house and the household as a social unit is no longer evident and has to be discussed.

In my paper I will discuss the possibilities to combine a vast bulk of archaeologically documented urban buildings from the 17th and 18th centuries in Kalmar, Jönköping and Linköping with detailed accounts of the households, the owners and the occupants. The relations between the households will be analyzed in comparison with the building structures within a theoretical framework of actors and agency. The main focus is how to develop the analyses and understanding of households as function and structure in past times, and the relationship between houses and households, as for example through deeper cooperation between historic and archaeology.

TH3-10 Abstract 06
Houses, households, and workshops in early modern Swedish towns

Author - Prof. Lindström, Dag, Uppsala university, Uppsala, Sweden (Presenting author)
Presentation Preference - Oral

The historiography of the early modern household typically identifies the household as a well- defined and coherent unit of social organization, co-habitation and work. Recently more open and varied approaches towards house, family and household have been introduced. Interaction, permeability, and variation appear as important dimensions.

Relating to these new approaches and considering the material structure of houses and town plots, this paper discusses the organization of living space, households and work space in early modern Swedish towns. More precisely, it focuses on artisanal households. It has been maintained that in early modern society the scene of labor was commonly the home, and that it was the development of wage labor that enhanced the separation of household and work. Concerning artisans, it is often taken more or less for granted, that artisanal workshops in early modern towns were located in direct connection with their homes.

Evidence from 18th century Swedish towns displays a huge variation in size and structure of artisanal households. When the interpretative cohesion is combined with information about the spatial structure of houses and plots, complicated and varied patterns of social organization and social interaction appear. Analyses systematically combining information from written sources and archaeological evidence about artisans and workshops furthermore demonstrate a less evident connection between residence and workshop. These observations provide a more elaborated discussion on how we conceptualize what a workshop is.
Theoretical and methodological perspectives in archaeology

Keywords: archives, collections, history of archaeology

In this session we are exploring theoretical and methodological approaches to archive-based studies as well as the conceptualization and use(s) of archives. The importance of archives for archaeological research and field practice is undisputed in present-day archaeology. Nevertheless archival sources are often neglected and/or underestimated. Archives are essential for historians of archaeology, but at the same time they are also invaluable for the everyday practice of archaeologists. The process of archiving is one of the most important features of archaeology and it has had a great influence on the professionalization of the discipline. However, various archival aspects are often overlooked. For example, it has been common practice to separate documents and artifact collections when archiving when they should in fact be included in the archives together as equally important archival data. This greatly impacts anyone who studies the past of a particular site, biography of an archaeologist or the history of archaeology in general. In addition, the archive can work as a resource connecting the past, present and future of our discipline. Archives can also provide a starting point for research projects.

The starting point for this session is the broad definition of an archive: archival records including documents, finds and museum collections. We welcome papers from scholars working with historic as well as contemporary archival sources and we also encourage broad-based humanistic views and interdisciplinary perspectives on archives. By exploring the archive as a concept and by combining various types of archival materials, we can redefine the archive as a resource and gain a new perspective on archive-based research studies.

TH3-11 Abstract 01

Renovating practices in the history of archaeology

Keywords: archives, history of archaeology, methodology, archives and archaeology

In this paper I will analyse my own experience of working in archives. I have been researching in archives on and off since 1995 and the experience gathered over the years has allowed me to refine several data compilation techniques. I have found that checking and cross-referencing the information I have gathered from archives over the years is one of the most challenging tasks I have faced. Interestingly, however, I soon realized that looking at archives was not only a question of new methods, but also of how questions were posed. Initial questions had to be revised to be able to use the considerable potential of the newly available data. My work is usually hindered by the fact that archaeologists are rarely trained for this. This may well, at least partially, explain the huge differences among those of us who search archives for information.

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TH3-11 Abstract 02

Archaeological archives – A deconstruction

Keywords: archaeological archives, archaeological processes, theory of science and methodology

In this paper I propose a critical examination of the archaeological archive. Using my personal experience as an archaeologist working in the archives at the Museum of Cultural History in Oslo as a point of departure and a case study, I intend to explore the concept of the archaeological archive from two different angles:

1. In archaeological research, archaeological contexts are always being interpreted with a conscious and reflective view on past research paradigms and history of science. Archaeological practice however, is very rarely subject to the same meta-archaeological scrutiny. Nevertheless, archaeological archives are historical artefacts with complex conditions of production, which, in the same way that archaeological artefacts can be read and interpreted as remnants from prehistory, can be read and interpreted, both as a historical source for the context and provenience of archaeological artefacts, as well as remnants of the theoretical and societal circumstances and conditions that have, in different ways, influenced the archaeological processes.

2. What has not and has not been documented and kept in the archaeological archives is a product of changing paradigms and selective memory, whether conscious or unconscious. Even so, because of the destruction and displacement caused by an archaeological excavation, the original documentation is the closest we will ever get to the original situation, and archaeological archives, in general, will offer a description of how and why it came into being. From the point of view of research, an archaeological archive will also be the least biased source of information, as every re-interpretation from previous research adds a new layer of preconceptions.

TH3-11 Abstract 03

History of the Museo Nazionale Romano: arrangement and management from the beginning to the 1930s

Keywords: museology, Terme di Diocleziano, museology

Through research in various Italian archives, it is possible to reconstruct the history of the first national museums of Rome in the nineteenth and twentieth centuries. Some collections of documents (like those of the Archivio Centrale dello Stato) allow us to understand the institutional events that the museum experienced in the course of its life. The archival material of the Italian Institute of History of the Museo Nazionale Romano and the personal archives of its most important archaeologists (like that of Francesco Fossati, preserved in the Palazzo Venezia in Rome) contain personal correspondence that enables us to draw a profile of the scholars who directed the museum in different periods. Lastly, the photographic archives permit us to reconstruct an idea of the arrangement of the museum exhibits over the years.

The National Roman Museum was founded in 1889 when, in the climate of nationalistic pride that followed the unification of Italy, the new government decided to bring Rome to the level of other European capitals, providing it with a large state archaeological museum, which could compete with the famous collections of the Vatican and Capitoline museums and with foreign public museums. In addition to this intention, there was also a practical problem: finding a shelter for the thousands of finds that the digs put in place for the redevelopment of Rome Capitale progressively brought to light. The choice of where to build the museum fell on the Terme di Diocleziano, an archaeological environment of exceptional importance in the heart of the city, that however revealed all its limits quickly. The legal status of the Baths, which was partly in the hands of private owners, and the areas unsuitable for exhibition of the works created enormous difficulties in the life of the Museum. The directors who took turns dealing with its management attempted large restoration projects to transform the archaeological ruins in the exhibition, but the technical difficulties and the lack of money prevented the realization of various projects. In this difficult situation, ordinances and arrangements of materials representative of the cultural climate of the different eras were proposed: from the environmental museology to the rhetoric and grandiose exhibitions set during the years of fascism. The archival material shed light on the facts and character of a season that is emblematic for the creation of legislation for the protection of antiquities in Italy.

Furthermore, part of the research is dedicated to the heritage of the museum. I have digitally studied the inventories of the Museo Nazionale Romano, preserved in the scientific archive in Palazzo Massimo. As a result of this work, I have created a database that collects information about the provenance and excavation context of some 35,000 artifacts. Diagrams that analyze these data enabled the study of the chronological evolution of the museum’s heritage and the reconstruction of the history of archaeological excavations in Rome during the late nineteenth and early twentieth century. This part of the research represents another possible use of the archival data to enrich a reconstruction of the museum’s history.
In this paper I want to develop a very simple linear line of thought about the significance of the archives and archaeological documentation. In one of his papers James Deetz proposed that archaeological documentation, field reports and similar works should be treated as archaeography showing that they are in a similar relation to archaeology as ethnography does to ethnology. One could push this idea further and claim that archaeography, description of the artifacts, and not the artifact itself is the source of archaeological research. During fieldworks artifacts are collected, measured, described and interpreted, and only the result of this process and not the excavated object could be called an archaeological source. And artifact documentation published in various reports and papers is then applied to other papers and the process is repeated indefinitely. Adopting this notion should switch scientific attention to the archives as they hold not only the aforementioned sources, but also artifacts-objects, and thus they provide the only context for reconstructing excavation process and reference point for the discourse. The nature of archaeological site allows full contact with the artifacts in its context, but as a price of being confined to the excavated area, so that the view upon explored culture or community is restricted only to the actual size of the site. Any additional information is obtained via archival sources, which makes properly maintained archives one of the most important factors for conducting studies. In my paper I will explore this inductive nature of the research by presenting the possibilities enabled by the introduction of joined archives for Greek painted pottery. Focusing on their main features like standardization of documentation, accessibility and others I will discuss benefits and drawbacks of archive-based research.
Albeit Cyrenaica, being one of the prominent regions of the Greco-Roman civilization, attracted the attention of scholars from the medieval period onwards, its political isolation after the Arab and later, Ottoman conquest, gave rise to the visible in the archaeological recognition of this area. Europeans could not visit it before the 18th century and, even in the 19th century, travels were still not numerous. Nevertheless, the travelers' accounts, only partially published, constitute an invaluable source for the research on history of archaeology. They reflect the increasing knowledge of the region and, at the same time, they illustrate the archaeology in transition from its pre-scientific to the scientific stage. The first topographical identifications were successively complemented by descriptions of the undertaken excavations and considerations about the ancient art. The history of discovering Cyrenaica enables us to capture and follow significant stages in the evolution of archaeological interests, pursued by scholars active both on the sites and behind their desks. However, this story could not be fully understood if deprived of the broader, political and social perspectives. From the beginning of the 19th century, when archaeological activities ceased to be purely private ventures, public authorities used archaeological travels to achieve their own purposes, including non-scientific ends. The first topographical identifications was one of the most important archaeological excavations to justify an expansion in North Africa and the Middle East, on the other hand – the results of archaeological exploration: artefacts enriching museum collections, testified the prestige of the state. This political context can be reconstructed thanks to the archive queries of unpublished documents kept in various state institutions: National Archives, Museums, Historical Archives, etc. Since those documents reveal various uncover activities, their studies create an excellent starting point for further sociopolitical reflections not only on archaeology. The aim of this paper is to show several advantages of adopting different approaches to studying archive records in the British Museum and Musée du Louvre. Analysis of letters, notes about monuments, reports, minutes of the committee and other original papers allows making several observations concerning the development of archaeological methodologies. Apart from their obvious archaeological value, those documents allow also to reconstruct wider, political and social background of the journeys to Cyrenaica in the 18th and 19th centuries. Among the travelers, a special role was reserved for diplomats, for whom official activities created an opportunity to undertake their own research (e.g. Joseph Vattier de Bourville, George Dennis), and agents of the state institutions (e.g. Beechey brothers, Porcher and Smith). The support of the Admiralty or museums helped those travellers to fulfill both, scientific, as well as any other significant goals.

Digging in the repository: finding the First World War in the University of Glasgow archives

Archaeologists and archivists share a material focus; our disciplines deal with the tangible past, the physical manifestation of history through objects, documents, and sites. Furthermore, we are drawn to our work by the tantalising promise of the thrill of discovery, bringing to light knowledge that has been forgotten or neglected in intervening centuries. Thus, the collaboration of archaeologists and archivists for Glasgow University’s Great War centenary commemoration project seems a natural fit. This paper reflects upon the experience of being an archaeological and historian working in an archive, specifically examining the intersections of these two distinct but related practices while undertaking research into the First World War. Firstly, it highlights the intersections of these two distinct but related practices while undertaking research into the First World War. Firstly, it highlights the intersections of these two distinct but related practices while undertaking research into the First World War. Firstly, it highlights the intersections of these two distinct but related practices while undertaking research into the First World War.

Presentation Preference – Oral
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Archives Vs Archaeology: the case study of the building beneath Via di San Nicola de’ Cesarini, Rome

Author - Guaglianone, Andrea, Universita di Venezia “Ca’ Foscari”, Rome, Italy (Presenting author)

Keywords: Archaeology, Classical Archaeology, Ancient Topography, Topography of Ancient Rome, Ancient Rome, History of Archaeology, Archives Data, Historical Archives, Roman Architecture, Campus Martius

Presentation Preference – Oral

In this paper, I will try to shed new light on the discovery of a building excavated during the 1920s and 1930s beneath Via di San Nicola de’ Cesarini, Rome, by means of both archival data and archaeological evidence. Surveying the historical archives of Rome (i.e., unpublished notes, drawings, tracings of brick stamps, and period photographs) allows for both a reconstruction of the appearance of the building at the moment of its discovery, as well as the dating of its phases. The old cadastral of the city, the Catasto Pio Gregoriano, and the Cabreo delle fognare, the city map, a limited collection of plans and drawings of the ancient and modern drainage system of the city, are also invaluable tools for the completion of this task. Thanks to this work, it will be possible to reconstruct the building in all its phases and to attempt an identification of it, drawing a new and up-to-date archaeological map in order to facilitate future work on the surrounding area.

Digging in Archives: Writing the Scientific Biography of Archaeologist Zsófia Torma

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Keywords: archival materials, scientific biography, Zsófia Torma

Presentation Preference – Oral

Zsófia Torma (1832–1899) was a Hungarian archaeologist who had a significant contribution to the development of prehistoric archaeology in nineteenth-century Transylvania, which was then part of the Austro-Hungarian Empire. She is most notably known for her research conducted at the prehistoric settlement of Turda-Luncșe (Hunedoara County, Romania) which is one of the most important archaeological sites in today’s Romania, and as for the international academic network that she developed through her vast scientific correspondence with well-known scholars of the time, such as Archibald Henry Sayce, Francis Haverfield, Johannes Ranke, and Albert Voss. After Zsófia Torma’s death, her activity was underestimated and ignored by most Romanian and Hungarian archaeologists for almost a century. However, the systematic excavations conducted at the site of Turda-Luncșe between 1992 and 1998, as well as the preventive ones in 2011, have revealed the necessity of re-evaluating her archaeological activity and writing her scientific biography. This paper is a case study about the experience of working with archival sources in the process of writing Zsófia Torma’s scientific biography, within a complex research that has been undertaken during the past three years, in seven Central and Eastern European institutions. These institutions are as follows: The National Széchényi Library (Budapest, Hungary), The Hungarian National Museum (Budapest, Hungary), The National Archives of Hunedoara County (Devâ, Romania), The National History Museum of Transylvania (Cluj-Napoca, Romania), The Brukenthal National Museum (Sibiu), The Székely National Museum (Sânmărtin, Romania), The Bruckenstein National Museum (Sibiu, Cluj, and Hunedoara, Romania). These institutions are the richest in archival materials concerning Zsófia Torma’s personal and scientific life. The first part of this paper aims to trace the differences and similarities between the archival materials from Romania and Hungary, by taking into consideration various aspects ranging from the content and relevance of the documents to their accessibility, way of preservation, and current role in historical research. In addition to this, the second part of the paper focuses on the methodology employed in this research, as well as its main results and conclusions. Finally, the paper emphasizes the importance of archival materials in establishing Zsófia Torma’s place in the role in the history of Hungarian, Romanian and European archaeology.

Archives and shipwrecks in the Baltic

Author - PhD Student Akiv, Rikka, The National Board of Antiquities, Helsinki, Finland (Presenting author)

Keywords: archives, maritime history, shipwrecks

Presentation Preference – Oral

The brackish waters of the Baltic hide thousands of shipwrecks from different eras. Most known wrecks of sailing vessels are from historical times and later than medieval. How can we compare and combine the sources from archives and archaeological data from shipwrecks to make their story complete and also scientifically valid? Archaeological and archival research are not two separate fields any more. The key is to establish a good collaboration and to use both fields to improve our understanding of maritime history. A crucial point is also to determine the importance of the archaeological and historical sources in the research. The Baltic Sea is an area where archaeological and historical research plays a huge role. This presentation focuses on an archaeological project that is running at the National Board of Antiquities in Helsinki that is called ‘Dig the Baltic’. The aim of the project is to digitize all known shipwrecks in the Baltic Sea. The programme was initiated in 2016 and is a collaboration between the National Board of Antiquities and the Baltic Sea shipwreck owners. The purpose of the project is to make certain shipwreck information is available for everyone, enabling people to do more research and use the information correctly in their projects. The project is an ongoing process and the end date is uncertain but the goal for now is to have a user-friendly database that is available for everyone.
to start the research in archives. Sometimes an archival source – a document like an accident report or an announcement in the newspaper – leads to a systematic search for a possible place of wreckage. As archaeologists, we must learn to read both the material culture and archival sources, which possibly relate to each other. In this paper, two cases from Finnish waters will be presented, which have both archaeological findings and written sources associated with them.

The first case is that of a remarkable medieval maritime accident with quite a lot of written documents telling its story. The possible site of the accident is in the brackish waters of the Gulf of Finland. How might we interpret the scattered pieces of a wreck in the area, and how might we reconstruct the accident from the late 15th century? The other case is related to two shipwrecks of 18th-century merchant ships. Would it be possible to combine written documents, like bill of salvaging records, to find a shipwreck? Is it possible to identify a shipwreck, and what methods should be used in the archaeological research process?

The relationship between archive documents and archaeological material of a naval conflict

Author: Mäkinen, Johanna, University of Helsinki, Sipoo, Finland (Presenting author)
Keywords: naval conflict, wreck sites, written documents
Presentation Preference – Oral

This research questions the role of archive documents in conflict archaeology. The second naval battle of Svenskund took place on 9 July 1790 on the south coast of Finland, outside the modern city of Kotka. The battle was part of the Russo-Swedish War (1788–1790), and it is the largest naval battle ever fought in Northern Europe. The focus of this research is the apparent contradiction between archival documents about the battle, and existing archaeological material. The general view, based on written sources, is that a large number of the vessels of Russia’s rowing fleet shipwrecked near Lehmaäsaari Island, on the east side of the naval battle area, after being disadvantaged, partly due to weather conditions. However, only eight wreck sites have been located so far in the vicinity of Lehmaäsaari Island. The small number of the wrecks has been explained by site formation – especially non-cultural – processes, but no comprehensive research has been published about this subject. The aim of this paper is to study this imbalanced relationship between archival documents and underwater archaeological material. The body of material interrogated consists of the archive – both primary and secondary sources – as well as archaeological material.

Analysing Archived Material to Unravel Wheelhouse Chronologies in the Western Isles, Scotland

Author: Dr. Kua, Anthony, University of Glasgow, East Kilbride, United Kingdom (Presenting author)
Co-author(s) - Brown, Lisa, Historic Environment Scotland, Edinburgh, United Kingdom
Co-author(s) - Goldberg, Martin, National Museums Scotland, Edinburgh, United Kingdom
Keywords: Archival Analysis, Bayesian Chronological Modelling, Scottish Iron Age
Presentation Preference – Oral

The site of Bruthach a Tuath on the Isle of Benbecula was investigated as part of rescue excavation which was undertaken in 1956 and 1957 in advance of the building of a Rocket Range in the Uists; the results of which were never published. In the 60 years since, the finds material and paper archive has found its way into the collections of a number of different institutions, including the National Museums Scotland, Kelvingrove Museum, Historic Environment Scotland, and the National Archives. Collation and analysis of this fragmented record has brought to light previously unrealised information about the excavated features, showing the presence of at least two wheelhouses and numerous related features.

Details for the excavated deposits were lacking, although the location of the artefacts and the date they were found was recorded on the finds boxes; consequently, a finds matrix formed the basis for interpreting the stratigraphy on site. A radiochronology dating program was undertaken to identify the timing and sequence of activity related to the wheelhouses. Twenty-six radiocarbon measurements were taken from single-entities of wood charcoal, animal bone, human bone, and pottery residue. A Bayesian approach that considered stratigraphic contexts and feature formation processes was used to estimate the site chronology and sequence. Results demonstrate that activity occurred primarily in the 2nd–1st centuries BC. The chronological analyses have also helped identify ancient curation and provide evidence addressing if Iron Age activity may have been more extensive than the two deposits. Further, this demonstrates the potential that artefacts in older archives have for producing new chronologies and for refining archaeological interpretations. Similar approaches could be taken to help maximise the potential of old archives that may be incomplete or not recorded according to modern standards.

The Aerofototeca Nazionale of Rome: a photographic archive for the study of Italian heritage

Author - Foà, Luisa, Rome, Italy (Presenting author)
Keywords: archival archival, Adriamantea
Presentation Preference – Oral

Today, with the use of commercial drones, aerial pictures of archaeological sites and landscapes can be easily obtained, and thanks to more or less user-friendly software, easily processed – as it was recently discussed at the 2nd International Aerial Archaeology Conference that took place in Rome in February 2016 – and present-day records can be compared with “pre-economic boom” images to better understand what has changed in our landscapes and clear sites. Since its creation, the Aerofototeca Nazionale, based in Rome, has acquired several different collections of aerial photographs. Today it houses aephotographic materials that date from the very end of the 19th century (e.g., the images taken by G. Boni during his excavations in the Roman Forum) to recent years. The core of the collections are the thousands of images taken by the Allied air forces while surveying war zones during WWII; despite their often precarious preservation state, those images depict several areas of the Italian Peninsula that look totally different today, due to the growth of urban areas and the development of infrastructures.

The Aerofototeca, founded in 1958, is a historical photographic archive of the ICCD – Istituto Centrale del Catalogo e Documentazione – part of the Italian Ministry of Culture (MBACT). The archaeological Dino Adradaate was the first director of the Aerofototeca. He organized the first body of archival materials and designed the archive as an instrument for the collection, preservation, cataloguing and study of aerial photographic records. The Aerofototeca is an essential source for archaeological research and the safeguarding of our heritage.

The author of this paper, during an 18-month internship at the Aerofototeca, followed by field research, worked on the rearrangement of a group of more than 4,000 slides, the so-called “fondo Adradaate,” a focus on a selection of those slides was published on the periodical Archeologia Aerea VI, 2012). The aim of this paper is to show a few examples of the potential of this archive as a fundamental source for understanding the development of our fast-changing landscapes and as a tool for the safeguarding of Italian archaeological sites.

In particular, starting from the pioneering 1908 aerophotographic survey of a stretch of the Tiber River, some areas along the river will be analyzed on the basis of the materials available at the Aerofototeca, retracing phases of ancient and recent history of the landscape.

Endangered Archaeology in the Archives: utilizing historical aerial photography to assess heritage

Author - Banks, Rebecca, University of Oxford, Oxford, United Kingdom (Presenting author)
Keywords: aerial photography, databases, heritage under threat
Presentation Preference – Oral

The Endangered Archaeology of the Middle East and North Africa (EAMENA) project aims to locate, document and monitor archaeological sites and any damage to those sites in an online platform for the Middle East and North Africa region utilizing remote sensing and networks of professionals. The threat to archaeological sites due to political and social upheaval in the MENA region has drawn much attention and is being effectively monitored remotely by a number of projects, but the more gradual threats to sites from development and agriculture over the last century are less well documented. Historical aerial imagery collected from the first half of the 20th century is a fantastic resource that has captured landscapes and sites before modern development, population increase and conflict drastically changed the region and accelerated heritage loss. The collections however are scattered between institutions and many are poorly documented. The paper will present how EAMENA with the Aerial Photographic Archive for Archaeology in the Middle East (APAME) has begun working with these collections to not only utilise a fantastic resource for the documentation of heritage, but to digitise and facilitate knowledge sharing of what these collections hold.

Another kind of archive: on the preservation of publications and born-digital material

Author - O’Riordan, Emma Jane, Society of Antiquaries of Scotland, Edinburgh, United Kingdom (Presenting author)
Co-author(s) - Osborne-Martin, Erin, Society of Antiquaries of Scotland, Edinburgh, United Kingdom
Keywords: archaeology, digital, publications
Presentation Preference – Oral

The other case is related to two shipwrecks of 18th-century merchant ships. Would it be possible to combine written documents, like bill of salvaging records, to find a shipwreck? Is it possible to identify a shipwreck, and what methods should be used in the archaeological research process?
The Society of Antiquaries of Scotland has been publishing since 1780 and has produced the journal Proceedings of the Society of Antiquaries of Scotland (PSAS) annually since 1851. These volumes provide a record of research excavations, rescue excavations, archaeological surveys, studies of objects, overviews of historical records, publication reviews and more. Physical copies of the Proceedings are sent every year to Fellows of the Society as well as to libraries and institutions across the world. In 2001, the Society began scanning our PSAS archive and since 2003, PDFs of papers more than a year old have been available to view freely online via the Archaeology Data Service (http://archaeologydataservice.ac.uk/archives/view/psas/index.cfm); since 2011, users have downloaded PSAS articles more than 386,000 times. We also host the full text of our out-of-print monographs and Scottish Archaeological Internet Reports (SAIR) with the ADS. The sheer amount of archaeological knowledge that our publications represent makes it an indispensable resource for anyone studying the history of antiquarianism and archaeology in Scotland, as well as a treasure trove of detailed information on archaeological sites and artefacts. As these publications cover hundreds of years of research, thousands of different objects and sites and hundreds of authors, their single common link is often the Society itself. How can the Society best use its own heritage and archives to inform future work? One of the research projects of the Society is the Scottish Archaeological Research Framework (ScARF). This free-to–use online resource (www.scottishheritagelab.com) summarises what the acknowledged experts in their fields – not only archaeologists but also those in related disciplines such as geosciences, environmental sciences, history and museums – thought about Scottish archaeological knowledge at the time of the first reports in 2012. The work is divided by time period and each period ‘panel’ made a series of recommendations for future research. Now, in 2016, the panels are beginning work on the next version of these reports. This will mean that the 2012 reports become, in effect, an archive themselves. One of the challenges moving forward will be to ensure that as the first set of questions posed are answered, that the archaeological information that led to them are not forgotten but archived so that in the future, contemporary trends and lines of thinking can be studied. It is planned that the new reports will contain links to more of the raw data and archives used in their creation and it is possible that many of these data and archives will be available online. However, the ability to view these will only be a useful addition if they are openly accessible. The Society has a privileged position from which to think about the long-term survival of our archaeological heritage as it has been around since 1780 and, as long as there Fellows with an interest in Scottish archaeology and history, will remain for the decades and centuries to come. How can we ensure that our rich history and archives will remain visible and relevant for as long as they are needed?

TH3-11 Abstract 18
Ancient inscriptions and digital archives: offering an undeciphered script to the public
Author - Dr. Tomas Helena, University of Zagreb, Zagreb, Croatia (Presenting author)
Keywords: 3D scanning, ancient inscriptions, digital archives
Presentation Preference - Oral

Creating databases with digital archives of ancient inscriptions has become customary over the past decade. Digital databases of cuneiform tablets are particularly popular, and thanks to advanced digital technologies, especially 3D scanning, thousands of cuneiform inscriptions can now be freely browsed through by both specialists and non-specialists, meaning that they have become easily accessible to anyone interested in studying them. Yet, there are many inscriptions in other ancient scripts that still await a similar treatment. One such script belongs to the realm of the earliest European literacy: Linear A, used during the Minoan civilisation and still undeciphered. A digital archive of clay tablets inscribed with this script is still non-existent, but hopefully such a state of affairs is soon to be changed. By taking Linear A tablets as a case-study, the paper presents various aspects of how our understanding of ancient inscriptions can be improved by using their 3D images. Previously used plaster casts, photographs, drawings and text copies of tablets have not proved accurate enough, especially when it comes to analysing various physical features of tablets. For decades clay tablets were treated as secondary to inscriptions they carried, and it is fairly new to approach those documents as archaeological objects themselves and pay full attention to their physical properties. Studying those physical properties is nearly impossible from conveniently published corpora, whereas access to actual tablets is limited to a small circle of specialists (and even they sometimes face obstacles, such as the fact that relevant inscriptions may be scattered around the world, museums, either displayed behind glass in museum galleries, or locked away in museum storerooms). Digital archives of 3D images have been changing this situation rapidly, and they in addition allow interdisciplinary research, for example a study of finger-prints of scribes. The paper will provide an overview of various aspects of improvements in our understanding of Linear A inscriptions achieved by creating their digital databases, and it will also reflect upon how such a digital database could draw a much greater interest of public to this undeciphered script. For the simple reason of inaccessibility to its tablets, crowding-out is automatically excluded from the field of Linear A studies – an important thing to keep when reminding ourselves that a successor to Linear A – the first known Greek script called Linear B – was deciphered by a non-specialist.
How to make a field school work: managing issues, dangers, opportunities

Friday, 2 September 2016, 09:00-16:00
Faculty of Philology, Room 114
Author - Bedin, Edoardo, UCL, London, United Kingdom
Co-author(s) - Di Felice, Patrizio, Roma, Italy
Co-author(s) - Miaczewska, Anna, Universität Mari Curie-Skłodowska w Lublinie, Lublin, Poland
Co-author(s) - Kubeš, Agata, Uniwersytet Wrocławski, Wrocław, Poland
Co-author(s) - Vecchiet, Costanza, Durham University, Durham, United Kingdom
Co-author(s) - Sposito, Francesca, Università di Padova, Padova, Italy
Co-author(s) - Cesari, Giulia, Universität zu Köln - Archäologisches Institut, Cologne, Germany
Keywords: Archaeologists, Management
Presentation Preference - Regular session

Archaeology Field School is supposed to be a training environment for students who aspire ultimately to become archaeologists, but is it the right place? Archaeological projects have faced for many years now an increase in field school offers, the majority of them asking students to pay a fee or tuition for joining the field school where they would be trained by professional archaeologists. Very often these projects ask for very high fees which students cannot always cover, consequently forcing them to search for other training opportunities.

What are the reasons for such high fees? Do these high fee projects train better archaeologists than other archaeological fieldworks? What is the best technique to build up a successful field school project? What expectations do student have when they apply for a field school? Should field schools be led by universities, non-university institutions, or partnership between the two? Would a management plan and a business plan help to provide a better working place for all the parties involved?

The primary purpose of this session is to analyse archaeologists’ working methods on developing a successful field school with the aim of answering the questions above. The discussion should focus on issues encountered during the development of projects and on means for providing the best training for archaeology students, where the focus should be placed on improving their skills in a limited time-span, but also reducing the costs of running the field school.

The ultimate purpose of this session is to provide the base for further improvements in the creation of effective and well-organized projects, which can turn archaeology students into actual professionals on archaeological sites.

TH3-12 Abstract 01
From Office to Field: Developing University of North Georgia’s Sicilian Archaeological Field School
Author - Prof. Balco, William, University of North Georgia, Dahlonega, Georgia, United States of America (Presenting author)
Keywords: Engaged archaeology, field school, instructional research
Presentation Preference - Oral

Archaeological field schools are the primary means to expose students to their first excavation and to train future generations of professional archaeologists. During these programs, students are engaged in experiential learning, critical thinking, and cultural experiences. Likewise, the development of an archaeological field school often engages university administrators and faculty in a similar manner, introducing them to the nuances of scientific archaeological fieldwork in diverse settings. This paper discusses the challenges faculty and administrators must face together when developing an international archaeological field school. Such programs break the mold of a traditional study abroad program by involving complex logistics, risk management strategies, site locations, course schedules, and learning outcomes. University of North Georgia’s Sicilian Archæological Field School serves as a case study for the development and implementation of a new international program requiring close collaboration between university, civic, and regional partners. This program blends instruction with research to provide students with a holistic perspective of archaeology. The delicate balance between project goals, pedagogical goals, and logistical challenges, and program costs are explored, proposing a strategy to keep costs low and learning outcomes high. When offered as a study abroad program, such instructional research projects afford students with the skills necessary to pursue careers in archaeology as well as valuable cultural experiences translatable to a broad variety of careers.

TH3-12 Abstract 03
How to improve the offered preparation and avoid the risk of “fake” field school
Author - Vecchiet, Costanza, Durham University, Trieste, Italy (Presenting author)
Keywords: Archaeology, Field school, skills
Presentation Preference - Oral

Field school seems to be a compulsory “step” for every future archaeologist is required to attend to form and train his/hers skills, useful for any future career. However, over the past decades - especially the last two - a steadily increasing lack in number of sponsors and fundings opened the access to excavation areas to volunteers and non technician, in love with this job, holding partial or no skills at all, but available to help and enjoy the digging experience in change, sometimes, only of accommodation and meals.

Surely, to some extent, the contribution volunteers gave to archaeology has been wide and important in order to carry on some excavation valued little. But is it safe, both for security and carefulness of the work, replace in the hand of not paid and not formed specialist the work that should be led by professional archaeologists?

Universities are the first bodies aloowing to test our abilities, training our skills and checking our work during the whole excavation session. Otherwise, especially in certain countries were the practices of field school on “real” excavations are sponsored by participants, volunteerism and crowdfunding, there is a high risky of “cheating” field schools, aiming mainly in collecting money, but no able and not in need to give a proper formative experience.

This paper is aiming to analyze both the academic and the private sector, trying to outline fixed point and guiding lines the two of them should use when offering an amazing, but truly worthy, field school experience.
The theoretical and methodological perspectives in archaeology

The processing of all samples from Abrigo do Po

They join a learning environment through the excavation of a Roman maritime site, set along the Tyrrhenian coast. The formative

of Archaeology at the University of Sheffield, in collaboration with John Cabot University, the University of Queensland, Michigan

archaeologists and fulfil their expectations, in terms of enhancing their future academic or commercial archaeology careers.

Presentation Preference

Archaeology, Fieldschools, Training

Author

Training the future generations of archaeologists at Alberese

Author - Dr. Sebastian, Alessandria, University of Sheffield, Sheffield, United Kingdom (Presenting author)

Keywords: Archaeology, FieldSchools, Training

Presentation Preference - Oral

This paper aims to describe the nature of the field and lab schools directed under the umbrella of the Alberese Archaeological Project in south Tuscany (Italy). Moreover it intends to show how the schools were built up to train the next generation of archaeologists and fulfill their expectations, in terms of enhancing their future academic or commercial archaeology careers.

The Alberese Archaeological Project provides two different types of training schools. Both of them are run by the Department of Archaeology at the University of Sheffield, in collaboration with John Cabot University, the University of Queensland, Michigan State University, the British School at Rome and a local company of commercial archaeology.

The archaeological fieldwork school attracts students and early career scholars from all over Europe and North America. They join a learning environment through the excavation of a Roman maritime site, set along the Tyrrhenian coast. The formative

TH3-12 Abstract 06

Theoretical and methodological perspectives in archaeology

Archaeological Field Schools have been for many years now seen as the suitable environment in which archaeology students can be trained to become professional archaeologists. In the last decade Field Schools have become very popular and are no longer exclusively run by Universities but are increasingly run by private institutions.

This paper is based on the author’s experience at University of Reading Field School Silchester Insula IX: Town Life Project (2011-2014) and it is to present through the analysis of detailed data, interviews with former participants, personal experiences the field school organisation and learning process which transformed (some) students into Silchester Insula IX supervisors and professional archaeologists. It will describe the author’s participation – first – as overseas student and then the path he had to follow in order to become one of the trench-supervisors – responsible for a group of 15-25 students and volunteers. What is the role of a supervisor and what are the tasks of this key figure? especially regarding teaching/learning and health&safty, site documentation, site management, site supervision and archaeological reports are some of the points that will be discussed.

The second purpose of this paper is to present: firstly, what are the issues (i.e. health&safty, students' satisfaction, visitors on site), dangers (i.e. funding, conservation, post-excavation projects) and threats (i.e. high fees), that this Field school dealt with the combination of university and non-university institutions, leading and organizing the schools and their related activities, represents a plus in the experience of the participants. Moreover, a point will be made on the opportunity offered also to young specialists and scholars to develop their own teaching experience, helping them to enhance their future careers in academic or in professional archaeological units.

TH3-12 Abstract 07

Theoretical and methodological perspectives in archaeology

TH3-12 Abstract 05

Running Your Dissertation as a Field School: Pros and cons for both instructor and students

Author - Poltorak, Darren, SUNY Buffalo, Tonawanda, United States of America (Presenting author)

Keywords: Archaeologists, Field School, Teaching

Presentation Preference - Oral

Since 2010 the Cumduza Archaeological Research Project (CARP) has been run as field school, so well providing the archaeological data for dissertation research. Developed from positive first-hand experience the PhD candidate received immediately after undergrad, it has strived to create a learning experience for students that not only instructed, but also conveyed passion for archaeology. CARP has experimented with team size, staffing, accommodations, workload and price over its history. Operating outside of the university structure, much of this had to be worked out through trial and error. Through it all, there was always a strong emphasis on engaging with students and treating them as junior colleagues, teaching archaeology beyond the excavating part, and keeping it affordable. This paper discusses how this ethos was maintained and thrived, and possible ways that large institutionalized projects could improve the students’ experience.

TH3-12 Abstract 08

To what extent can management skills help archaeological sites in their self-sustainability?

Author - Vecchiet, Costanza, Durham University, Trieste, Italy (Presenting author)

Keywords: Archaeology, Future, Management

Presentation Preference - Oral

Sadly, we are living in an era in which archaeological and general cultural heritage are often downgraded with scarce financial helping and bad evaluation of their potential, both economical and educational. Over the last two decades, new types of possible financing (like crowdfunding and small donation from private bodies) have offset the vacuum of state financial assistance - at least in Italy - allowing some important project to be realized even after all.

Nevertheless, it is undeniable this cannot be considered a long term solution, and new perspectives for the maintainance of archaeological sites and cultural areas need to be founded out and seriously taken into account.

TH3-12 Abstract 04

Theoretical and methodological perspectives in archaeology

Archaeology, Future, Management

Theoretical and methodological perspectives in archaeology
One of this could be and, in the daily scenario, must honestly be an attempt to self-sustaining by the excavations and of the cultural projects themselves. It is in this renewal air and management reorganization that new Master and specialized courses were born. They are born because of the sector specialists having realized how important it is for the survival of archaeology and free management find a way to make culture more accessible, not a slave to political austerity. Several can be the ideas an archaological site could develop in order to achieve its “freedom”: paid guided tours, small gadget for visitors, open days/weekend for families during which could be asked a small contribution for excavation maintenance. Everything it is up to the archaeologists and their skills in understanding what people really want, and what people are really keen and available in paying for.

Certainly, also enriching the staff with one or two specialized managers could be a good idea, but why do not melting archaeological and managing knowledge all in the hands of ones who really run the excavation and its activities?

These, obviously, are just some suggestion. Thus, analyzing and comparing experiences tested already, the present paper will try to give an overview about the current status of archaeology and its future opportunities and possibilities if well managed.

**TH3-12 Abstract 09**

**Site management and business plans, conservation and public engagement issues and opportunities**

*Author*: Edoardo, Bedin, UCL, London, United Kingdom (Presenting author)

*Keywords*: Financial Self-sufficiency, Site Management, Sustainability

*Presentation Preference*: Oral

Archaeological projects have been for many years now considered enterprises run mainly by public funding. Additionally, in many countries it is a commonly accepted notion that supporting heritage will automatically mean money loss and the need for extra funding is a constant “curse” for many site managers. In particular cases insufficient funding precludes the management of the site from running even basic maintenance work, consequently causing bad publicity, as less areas become accessible for visiting, and reducing the opportunities to improve the site facilities.

The primary purpose of this paper is to explore through case-studies what are the key aspects of a successful management plan and business plan and what are the major financial, political issues encountered during the development of projects and how to handle these issues. It will also highlight the importance of involving different stakeholders as means to increase the chances of the success of site management, its conservation and valorisation.

The second purpose is to explore limitations in achieving financial self-efficiency while managing an archaeological site and demonstrating the need to change the approach to Italian Heritage in order to “rescue” it from the risk of abandonment due to lack of funds. If a site can reduce the reliance of public funds it will protect the site from possible conservation and valorisation issues due to funds cuts as a consequence of economical crisis like it has occurred since 2008.

The last goal of this paper is to explore what actions can be taken to reach a much wider public, including those that would not naturally come to visit the site, and understand the possible threats of the rise of visitor numbers, while investigating the possible benefits in terms of job creation within the site and in the buffer zone.

The final question which will be tried to answer is: are all sites potentially sustainable or is it necessary to consider the closure of some to preserve them until more funds become available?

**TH3-12 Abstract 10**

**Drama - Merdzhumekia:**

**German archaeological field-school in Bulgaria**

*Author*: Valčhev, Todor, Regional historical museum - Yambol, Yambol, Bulgaria (Presenting author)

*Keywords*: archaeological field-school, Drama - Merdzhumekia, German methodology

*Presentation Preference*: Poster

The prehistoric settlement mound Merdzhumekia was situated near the village of Drama in the Tundzha municipality, Yambol district. It has been completely excavated during the Bulgarian-German project from 1983 to 2011. The joint project was undertaken by Sofia University “St. Kliment Ohridski” in Bulgaria and Saarland University in Germany. The international project was led by prof. Alexander För, prof. Jan Lichardus, prof. Francia Bartemes and Iliya Iliiev.

The aim of this poster is to present the methodology used by German scholars during the archaological excavations in the village of Drama. The system permitted students to participate in all aspects of the project: archaeological excavations, graphic documentation and processing of ceramic materials and finds. During the international project, more than 300 students and University assistants participated from Bulgaria, Germany, Czech Republic, Slovakia, Hungary and Luxembourg. Some of them are now leading archaeologists and University professors in Bulgaria, Germany and England.

**TH3-12 Abstract 11**

**The archaeological field school in Malkoto kale near the village of Voden, Bulgaria**

*Author*: Bakardzhiev, Stefan, Regional historical museum - Yambol, Yambol, Bulgaria (Presenting author)

*Presentation Preference*: Poster

Malkoto kale represents a Medieval castle. The site is situated near the village of Voden, in the Yambol municipality. It is situated on a small pick which is only accessible from the south. The area of the site is 0.09 ha. The castle appeared in 10 c. when modern day Bulgarian lands were included in the borders of the Byzantium Empire. Malkoto kale was destroyed at the end of the 12 c. during the Third Crusade, lead by Friedrich Barbarossa (1122 – 1190). In 1189, the German Crusades crossed the Thracian territory on their way to Holy Lands.

In 2011, a joint project begun between the Regional Historical museum in Yambol and the University of Library Studies and Information Technologies in Sofia. The archaeological site Malkoto kale has become a place for students studying areas such as “Information Collections of the Cultural and Historical Heritage” and “Information Resources of Tourism” to further their studies in the summer. The work on the archaeological site permits students to become acquainted with an “innovative cultural heritage”. At the same time, they have the opportunity to touch archaeological artefacts which are “moveable culture heritage”.

The aim of this poster is to represent the results from the past years, showing the excellent collaboration between the Regional historical museum in Yambol and University of Library Studies and Information Technologies in Sofia. Many students who participated in these archaeological excavations have been successfully recognized after graduation in both of these specialties.

**TH3-12 Abstract 12**

**The archaeological field school in Malkoto kale near the village of Voden, Bulgaria**

*Author*: Bakardzhiev, Stefan, Regional historical museum - Yambol, Yambol, Bulgaria (Presenting author)

*Presentation Preference*: Poster

Malkoto kale represents a Medieval castle. The site is situated near the village of Voden, in the Yambol municipality. It is situated on a small pick which is only accessible from the south. The area of the site is 0.09 ha. The castle appeared in 10 c. when modern day Bulgarian lands were included in the borders of the Byzantium Empire. Malkoto kale was destroyed at the end of the 12 c. during the Third Crusade, lead by Friedrich Barbarossa (1122 – 1190). In 1189, the German Crusades crossed the Thracian territory on their way to Holy Lands.

In 2011, a joint project begun between the Regional Historical museum in Yambol and the University of Library Studies and Information Technologies in Sofia. The archaeological site Malkoto kale has become a place for students studying areas such as “Information Collections of the Cultural and Historical Heritage” and “Information Resources of Tourism” to further their studies in the summer. The work on the archaeological site permits students to become acquainted with an “innovative cultural heritage”. At the same time, they have the opportunity to touch archaeological artefacts which are “moveable culture heritage”.

The aim of this poster is to represent the results from the past years, showing the excellent collaboration between the Regional historical museum in Yambol and University of Library Studies and Information Technologies in Sofia. Many students who participated in these archaeological excavations have been successfully recognized after graduation in both of these specialties.
CREATIVE ARCHAEOLOGIES II
CONTINUING THEORY AND PRACTICE
IN A NEW BRANCH WITHIN THE FIELD OF ARCHAEOLOGY

Saturday, 3 September 2016, 09:00-13:00
Faculty of Philology, Room 114

Author - Dr. MacGregor, Gavin, Northlight Heritage, Glasgow, United Kingdom (Presenting author)
Co-author(s) - Danis, Ann, University of California, Berkeley, United States of America
Keywords: art, creative archeology, heritage, interpretation
Presentation Preference - Workshop

In this piece,
You may encounter the past,
In this presentation I would like to tell you all about the excavation, but I will not. This presentation will instead be your introduction to the concept of printboard-archaeology, and during a short workshop I will let you all be a part of excavating the local community through a pinboard at the venue.

In this presentation I would like to tell you all about the excavation, but I will not. This presentation will instead be your introduction to the concept of printboard-archaeology, and during a short workshop I will let you all be a part of excavating the local community through a pinboard at the venue.

TH3-13 Abstract 02
The Archaeology of Pinboards – the future and the past in ads and posters
Author - Archaeologist Grahn Danielson, Benjamin, Picea kulturarv, Fors, Sweden (Presenting author)
Keywords: Community, Future Archaeology, Pinboards
Presentation Preference - Oral

One ice cold day in the middle of March 2015 I was standing at the mainstreet of the small town Kopparberg, wondering what I was up to? In less then two hours a group of artists, asyntimeakers from all over the world, some locals and national television would arrive to participate in the excavation of the pinboard right where I was standing. Two days earlier I had launched the idea of excavating a public pinboard, as an archaeological method of finding the essence of Kopparberg, the future of the society, or at least what people were doing here. Because when asking the locals, no answers were given. Most common answer was “nothing”, or just vague answers about going to school, work, church or just going away to Örebro (the nearest city) when every change was given... Archeology can provide information about the contemporary life in a small town, and give another picture. In this case, national media was telling a story about Kopparberg as a depressing place: nothing happens there, the unemployment rate and the number of inhabitants is the highest in Sweden, everyone wants to move away and the municipality will be the first to disappear in the country. But in fact, archeology provided a totally different picture, a picture about people and a struggling community.

TH3-13 Abstract 03
Archaeological carpentry. Doing theory with your hands
Author - Dr. Mlekuž, Dimitrij, University of Ljubljana, Institute for the protection of Cultural heritage, Ljubljana, Slovenia (Presenting author)
Keywords: art, carpentry, theory
Presentation Preference - Oral

In the introduction to his book “Alien Phenomenology” (2012) Ian Bogost suggests that philosophers ought not just to write philosophy, at least not without practicing, doing, or making. He urges engagement in carpentry: constructing artifacts that do philosophy. This is more than artistic practice, carpentry is a perspective on creative work that asks philosophical questions. Or put in another way, carpentry is what you call it when things (including art) are used or made for philosophical use. I want do explore the use of carpentry as new forms of creative practice in archaeology, playful practice, that can help us to develop and archaeological concepts. I want to explore the use of “philosophical carpentry” using an example from my own work on archaeology of milk (Mlekuz 2015). I explore the notion of milk as an assemblage or ecology, using crafted objects. Exploring the relational nature of milk assemblage, I focus on the idea that nothing exists in and of itself, things exists only in assemblages. Things exist and take the form that they do by participating in an emergent web of materially heterogeneous relations. Use of miniatures (of bacteria, enzymes, cows, strainers, lactose, guts, calfs, genes, fat, cheese ...), all made on the same scale, instead of using words or concepts, allows playful exploration of connections between objects through their material and sensuous qualities. Open-ended practice associating and nesting objects creates surprising new assemblages, ecologies and associations and opens ways to new, creative understandings of milk assemblage.

TH3-13 Abstract 04
Creative archaeology of modern Moscow
Author - Doctor Beliav, Leonid, Institute of Archaeology of RAS, Moscow, Russian Federation (Presenting author)
Keywords: archaeological monuments, creative archaeology, modern Moscow
Presentation Preference - Oral

In Russian historiography there is still no custom to regard archaeological excavation as a place for creative extrascientific activity, as well as an archaeological finds obtained in the course of excavation still haven’t regarded as a piece of art. However, they certainty are. Archaeology spontaneously induces the appearance of art objects, starting with the temporal (video and performances at the site) and space objects (carefully planned out and methodically deepening excavations that are treated by the viewers and even by the participants themselves as a complex three-dimensional installations) and finishing with more traditional photos, sketches and drawings. In all these cases, archaeologists or the members of their team are making every effort to organize the excavation area, achieving the best light, locating the characters and generally working either as scriptwriters, or as a directors and cameraman, and certainly more often as a common draftsmen.

Finally, in modern cities the archaeologist daily come in contact with the challenge of incorporating the remains of the discovered antiquities into the urban context, also doing his best as a designer. As is well-known, similar forms of correlation of the art and science have been existed before: in the history of Russian archeology of the XIX-XX centuries there are plenty of examples of cooperation between the archaeologists and artists. The study of these examples could in time become an important direction of the special art-research.

In the report the results of the author’s observations on the creative approach to the archaeological monuments in Russia would be demonstrated.
Archaeological field schools are viewed as the first port of call for students aspiring to become archaeologists. On top of this, they are often major research outlets for universities and archaeological organizations, and often come to represent the sector on television and in publications. Their position and importance in the sector is well developed and, until now, viewed as well understood.

When starting research on field schools in the UK, confused responses were given to simple questions on definition, curriculum, length, cost, demographic and standards. I subsequently set out to start to answer some of these questions over three stages. The first developed the context, looking at how training in practical archaeology had developed over the last 50 years in relation to the economy, government legislation and the archaeological sector in general. The second addressed the issue of definition; comparing the different terms used for practical training – ‘field school’, ‘course’, ‘dig’, ‘fieldwork’, ‘excavation’ etc. - and seeing where the term ‘field school’ belonged and, importantly, who belonged within it. The balance discussions from sections 1 and 2, the final section looked to real data. Drawing from the first database of archaeological field schools in the UK and from a quantitative survey of individuals who attended field schools recently, they offered an insight into the current situation of field schools in the UK today. The response demonstrated a broad confusion over the definitions and expectations of field schools, fuelled by a lack regularity on the length, demographic, cost and curriculum on offer.

What this research shows is a fundamental area of the archaeological sector which, in the UK and contrary to its academic counterpart, has failed to develop in a way which caters to the demands and requirements by its participants. In light of the economic difficulties field schools are facing, they are being forced to compromise and develop. It is therefore a perfect opportunity, albeit well overdue, to develop field school as strategic assets for the sector and wider cultural heritage, as well as a fairer environment for those taking part. The data produced and topics discussed in this paper hope to mark the start of this process.

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**TH3-13 Abstract 06**

**Visual aesthetic of archaeological practice: a creative approach**

*Author:* Mermol-Martínez, José-Antonio, Arqueología de Guardia Association, Benjácomo (Murcia), Spain (Presenting author)

*Keywords:* archaeological practice, Archaeological theory, creative archaeology

*Presentation Preference:* Oral

The image projected by the archaeologists in the archaeological practice on the sites has set the social valuation of Archaeology in terms of relevance and uselessness. However, the procedures followed in the archaeological research have blockaded, in many cases, the consideration of Archaeology as an activistic practice to integrate, on purpose, the archaeological works into the citizen’s interests. Taken into account the destruction of social, cultural conventions which are posed by some special visual styles as Street Art and Photo/Video journalism, it is analyzed the creation of archaeological Ethnography to identify visual patterns which belong to the archaeological practice, which transform it into an aesthetical of movements, to allow the reflection about the concept of “universal”. This go beyond the Theory and has been applied on practice during a field school of Archaeology done at an official High School of the Spanish State, in Murcia, in which was made relevant the presentation of new ways to understand common values of Archaeology as the experience, materiality and temporality through playing with the visual perceptions of both artistic and archaeological practices, with the creation of Art and the take of consciousness. This, finally, propose us two interesting conceptions to the Archaeology: the inclusion of creative ways to see the meanings of archaeological practice, and the utilization of Archaeology in an activistic way to fight the injustice derived from the integration processes at the moment of socialization.

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**TH3-13 Abstract 07**

**Kulmin - digital dissemination of cultural heritage**

*Author:* Preistvold, Kristin, Sør-Trøndelag County Authority, Trondheim, Norway (Presenting author)

*Keywords:* digital dissemination, Kulmin

*Presentation Preference:* Oral

How do we inspire curiosity and interest in heritage and cultural history when the personal guide is absent? How can we create wonder and sense of place and time in the encounter between people and cultural heritage without a good storyteller?

Sør-Trøndelag County Authority has developed a product and a strategy for digital dissemination of cultural heritage via mobile phones and tablets named Kulmin. Focus is on the good story, the good storyline. Focus is on men, women and children’s encounters with the cultural heritage. The monuments and sites are made vivid and dramatic through text, audio and video on smartphones and tablets in stories based on archaeological, cultural and historical facts. The stories are characterized by myths, legends, events and people, conveyed through dramatization, humor and other narrative devices.

The dissemination has included input from the hearing and visually impaired, and the contents should be understandable and engaging independent of the user’s ability or disability. The aim of Kulmin is to make cultural heritage accessible to all. Kulmin takes the step from protection of our cultural heritage to facilitate, make available and visualize the historical monuments and sites. Kulmin as a product is not technologically advanced. The innovative aspect of Kulmin is in how heritage is being conveyed. Technology is only the tool, the content is the king with an aim to capture the interest and create curiosity. Dramatizing the past through the good story makes the cultural heritage more accessible and exciting.
**SETTLEMENT VARIABILITY AND SOCIO-ECONOMIC PROCESS**

TH3-14

Thursday, 1 September 2016, 14:00-18:30
Faculty of Philology, Room 114

**Abstract:**

The theoretical and methodological perspectives in archaeology have been a relevant topic in historical, archaeological and onomastical research, closely or melange of many factors? Settlement variability in Early Modern Scandinavia with earlier history where the focus of archaeological research has been in medieval periods. During the last two decades, archaeological excavations have increased the amount of source material, which offers an interesting supplement for historical research, even if focused on the same topic, is relevant and has many variables, which may change in the course of time affecting approaches, methods and results in remarkable ways. In urban contexts in Finland, archaeological practise has long been restricted by the existence of studies based on historical information, which however is not abundant or diverse. The supremacy of historical studies has especially affected the research of the early modern and modern periods in those towns with earlier history where the focus of archaeological research has been in medieval periods. During the last two decades, archaeological excavations have increased the amount of source material, which offers an interesting supplement for historical studies and cartographical information.

In this paper, the relation between research, settlement and the socio-economy of the city is discussed with an example of Turku, which is the oldest town of the present-day Finland and was one of the most important towns of the medieval and early modern periods. The first presentations of the layout of the city are from the 1630s and after 300 years of the establishment and settlement of the town. It took more than 100 years before a map was made in the 1750s with the list of the plot owners including information about their professions and site values.

Tracing the earlier settlement history and socio-economic topography of the town is like trying to compose comprehension about the picture by piecing an old puzzle with only a few pieces that have been spared. The information from the 17th century and beyond is valuable as such, but how much this information has labelled the conceptions and interpretations about the socio-topography of Turku in earlier periods and on what grounds? The city is a living organism which is changing in time/space situations is of great importance. In the Early Modern setting the town becomes a kind of ideal, in different ways for different actors, while still being a relatively unusual settlement form.

We wish to develop an analytical approach, which helps to identify similarities, while acknowledging the significance of the variability. When exploring settlements we need a broad range of theories and methods to work with and it is important to avoid initiating the analysis with rigid concepts and models. Instead of departing from simple typologies at the first stage of analysis, it could be more interesting and advantageous to start by tracing several factors, and subsequently look for correlations. It is most likely that such an approach allows for multiple perspectives when identifying socially, economically and/or politically relevant variables.

This session invites papers addressing to settlement analysis, in which variability is taken as an asset, even when looking for the general. We will discuss how archaeologists can identify variability and similarity at different spatial and social levels. Focus will be on examples from the Early Modern, but we are happy to include other relevant examples as well.

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**TH3-14 Abstract 01**

Farms, hamlets, villages and towns: Settlement variability in Early Modern Scandinavia

Author: Dr. Rosén, Christina, Arkologiska Sällskapet, Töllsjö, Sweden (Presenting author)

Keywords: Early Modern, Scandinavia, Settlement

Presentation Preference - Oral

Words like farm, hamlet, village or hamlet are often used to describe different kinds of settlements but they are not simple and straightforward. Archival sources, maps and archaeological record show no clear link between spatial form, socio-economic situation and political status. The same general form may correspond to different socio-economic situations. In this paper I will discuss settlements by taking variability as the starting point rather than pre-conceived concepts and models. Maps, tax registers and archaeological records from several parts of Scandinavia will be discussed with a focus on Western Sweden.

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**TH3-14 Abstract 02**

Areas reserved for rich and populated by poor or melange of many factors?

Author: Dr. Sappanen, Liisa, University of Turku, Turku, Finland (Presenting author)

Keywords: socio-topography, layout, Turku, early modern, urban settlement

Presentation Preference - Oral

Research, even if focused on the same topic, is relevant and has many variables, which may change in the course of time affecting approaches, methods and results in remarkable ways. In urban contexts in Finland, archaeological practise has long been restricted by the existence of studies based on historical information, which however is not abundant or diverse. The supremacy of historical studies has especially affected the research of the early modern and modern periods in those towns with earlier history where the focus of archaeological research has been in medieval periods. During the last two decades, archaeological excavations have increased the amount of source material, which offers an interesting supplement for historical studies and cartographical information.

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**TH3-14 Abstract 03**

Norrköping and Kalmar: A spatiotemporal analysis of two early modern Swedish towns

Author: Agnesten, Sofia Andrine, Gothenburg university, Gothenburg, Sweden (Presenting author)

Keywords: Early modern time, Settlement variabilities, Spatio temporality

Presentation Preference - Oral

During the early modern time, one of the most extensive phases of city transformation in Europe occurred in Sweden. This spatiotemporal analysis explores settlement variabilities and social dimensions in the two Swedish towns Norrköping and Kalmar during the time period. These were, from a Swedish Early Modern perspective, rather large towns with both having major ports on the east coast of the Baltic Sea. However, from a utilitarian and functional perspective they differed in many aspects and because of these differences they help illustrate some of the urban settlement variabilities of this dynamic period. The space analysis is performed on several levels, where the spatial dimensions are examined in the towns as a whole, but also on general aspects, at block level and even more thorough at plot level. The temporal part of this analysis focuses on exploring various time related processes that follow different rhythms and the possible impacts these had on the lives of the town residents. Some processes are slowed down by the inertia of society while others are more rapid, such as seasonal changes. The data from about two hundred archaeological field reports together with a theoretical orientation helps to unfold a more diverse picture of the Swedish early modern town.

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**TH3-14 Abstract 04**

Same name, same background, same function? Similarities and differences of the Scandinavian Husebyer

Author: Dr. Lemm, Thorsten, Stiftung Schleswig-Holsteinische Landesmuseen Schloß Gottorf, Schleswig, Germany (Presenting author)

Keywords: cultural-historical background, royal administration, royal farm

Presentation Preference - Oral

Since the early 20th century the more than 130 hamlets or farms in Scandinavia and the Orkneys known by the name Huseby, Husby, Husby, Husbye, Husbye etc. have been a relevant topic in historic, archaeological and onomastical research, closely linked to the discussion of kingship and political administration. Espe-cially the highly frequent use of the place-name Huseby, their uneven distribution over Scandinavia, and the use of husbyj as an appellative in some early written sources led to the understanding of a great majority of the Husebyer as places with a royal background. As such the Husebyer have in many cases been a substantial argument in theses on the administrative and economic structure of royal power in the Viking Age and the early Medieval Period and in theories about the early state formations. However, recently conducted detailed analyses of their cultural-historical backgrounds give reason for a much more differentiated view on the Husebyer. There are certain similarities and differences that can be observed between these sites and there must be reasons for that. Were different historical and/or chronological backgrounds responsible for the diversity of the Husebyer? And how does this affect the widely accepted interpretation of these sites? These questions will be addressed by the paper and hopefully discussed during the session.
Material, Socio-Economics and Outcome in the Medieval Baltic: A Triadic Model of Settlement Analysis

Author: Tighe, John, Trinity College Dublin, The University of Dublin, Castlerock Co. Mayo, Ireland (Presenting author)
Keywords: Agriculture, Early Medieval Ireland, Economic Development

The two greatest influences to the socio-economic landscape of Ireland in the early medieval period were the coming of Christianity and then the raiding and subsequent settling of the Vikings in the coastal empires, such as Dublin and Waterford. But how did these events shape the socio-economic changes at this point? I hope to show that these events were in themselves, the catalysts, rather than the instigators of change.

In the aftermath of the Late Iron Age lull, which ended c. AD 800, there was an increase in crop production, the growth is seen in stark contrast to the previous five hundred years or so, which it seemed to be a time of stagnant growth. The increase of crop cultivation, as well as the introduction of new technologies, such as the water-mill and the coulter plough, increased production, allowing specialisation and creating a surplus, furthering a division of labour and exchange networks.

When talking about the early medieval period in Ireland, one instantly thinks of the ubiquitous ringforts, of which it is now estimated, there was as many c.70,000. Despite Stout’s estimation that they went out of use after c. AD 900, there is no other type of secular settlement found in all areas of the country to populate the landscape. It is possible that although ringforts did not change in morphology after this period, many being re-occupied in the later medieval period, its possible location echoed a change in their function, away from being a cattle pen to being one used to control and exploit the agricultural producers. While some have attributed the inception of souterrains as refuges from Viking raiders, I would view them as drier storehouses for grain and, from family-orientated graves, including ferta, which were often used as boundary markers, towards community cemeteries, may have attributed the inception of souterrains as refuges from Viking raiders, I would view them as drier storehouses for grain and, from family-orientated graves, including ferta, which were often used as boundary markers, towards community cemeteries, may have attributed the inception of souterrains as refuges from Viking raiders, I would view them as drier storehouses for grain.
TH3-14 Abstract 10
Islands on lakes – life and rituals of Slavs in Pomerania during the pagen-christianity transition

Author: Prof. Chudziak, Wojciech, Nicolaus Copernicus University, Torun, Poland
Co-author(s): - Prof. Makowiecki, Daniel, Nicolaus Copernicus University, Torun, Poland (Presenting author)
Keywords: Pomerania, Islands, Religion, Slavs
Presentation Preference - Oral

The baptism of Mieszko I, the founder of Polish state, in 966, had been, for the Slavs living in the Odra and Vistula basin, an important caesura between a pagan style of life and the new, Christian one. For a long time, among medievalists and archaeologists, the knowledge on this topic has been based on researched proto urban centers such as Szczecin, Wolin, Koleczeg and Gdańsk. So far, little attention has been paid to the centers located on the islands of Pomerania Lakeland. However, since 2004, in the Institute of Archaeology at Nicolaus Copernicus University in Toruń, a research on the significance of these islands in the socio-economic and religious life of Slavs in the times of ideological and political transformation at the end of the 1st and the beginning of the 2nd millennium A.D. has been undertaken. Currently, the research is being conducted in several such places. The Island of Zaranūko, located on the lake Zaranūko, belongs to the better examined ones. In the following paper, the authors will present the selected questions concerning the interpretations of this place according to the religious, social and economic contexts. The results of the interdisciplinary archaeological and bio-archaeological research will be the basis of their considerations.

TH3-14 Abstract 11
Spatio-Demographic Structure and Social Organization: A Linear Trajectory or Overlapping Trends?

Author: Zubrow, Ezra, SUNY at Buffalo, Buffalo Ny, United States of America (Presenting author)
Co-author(s): - Dr. Dzhanenko, Aleksandr, Institute of Archaeology of the NAS of Ukraine, Kyiv, Ukraine
Keywords: demographic development, settlement, social complexity
Presentation Preference - Oral

Oversimplified understanding of the general systems theory with its concepts of balance, positive and negative feedback strongly related population growth and increase in social complexity and economy to each other. Meanwhile, recent studies showed disproportions between demographic trends and socio-economic transformations worldwide. Concerning the simulations based upon the Cucuteni-Tripolye settlements and their systems, this paper presents the deep non-linear patterns of demographic development that in many cases may be wrongly taken for specific types of socio-political organization.

TH3-14 Abstract 12
Settlement and Process in Colonial Encounters

Author: - Professor Cornell, Per, University of Gothenburg, Västra Frölunda, Sweden (Presenting author)
Keywords: Colonialism, Settlement, Socioeconomic
Presentation Preference - Oral

Discussing two cases from the Americas, the question of settlements and the socio-economic will be addressed in relation to a colonial context, the European conquest of the continent. One case addresses developments in what is today Quintana Roo, Mexico, and the other a case from the Calchaqui river system in today’s Northern Argentina. Questions of relationism and encounters will be addressed, but in particular the relation between settlement organization and the socioeconomic. The potentials of the concept of mode of production, in a new revised version, will be tested.

TH3-14 Abstract 13
Society in flux: Evidence from the middle/late Northern Württembergian Urnfield Culture

Author: - Girotto, Chiara, University of Durham, Durham, United Kingdom (Presenting author)
Keywords: Northern Württemberg, stratification, Urnfield Culture
Presentation Preference - Poster

Up to date the society of the Untermain Swabian-group of the middle/late Urnfield Culture has never been analysed by a combined approach of the spatial and temporal distribution of settlement, hoards, burial patterns (n=701 sites including isolated objects) and grave goods. This case study of Northern Württemberg introduces a new idea about of structure and organisation of society at Ha A2/B1. Furthermore it briefly presents a previously unpublished cemetery of the transitional Ha A2/B1 period at Erlebnbach "Käppelesäcker" (district Heilbronn, Germany). Settlement patterns suggest a society whose patterns followed natural resources while settling in close proximity to the most important rivers of the region, the Neckar and Tauber. Although hilted settlements exists no correlation with settlement accumulation or clusters could be detected. Therefore it is hypothesised that the patterns of settlement were governed by exploitation of natural resources of the lowland and access to larger rivers. The importance of rivers is stressed by the pattern of hoards as they mainly appear in the Neckar region. Burials follow the settlement pattern and imply the preference of rivers and suitable soils for agriculture.

Trade had to be an important factor of the North-Württembergian societies as they never developed distinct types of metal artefacts. No export objects are known but agricultural products and salt are both possible ideas. The ability to trade suggests over production and possibly the existence of a vertical social structure.

As cremation was the prevailing burial practice vertical organisation and its impact on individuals can only be interfered by the analysis of grave goods. Early and early middle urnfield grave cultures usually do not exhibit dissimilar “wealth” through grave goods. But at the cemetery of Erlebnbach “Käppelesäcker” the grave of a child (7-10 years) yielded a small golden wire ring, a rare imported broken bronze bracelet, other metal objects and pottery. This finding might suggest a heritable form of social status but no other rich graves were detected in the necropolis. It is hypothesised that some individuals could accumulate more imported objects than others and some form of vertical organisation existed.

Overall the study concluded that the data of the transitional Ha A2/B1 period suggests a society in flux. First obvious differences in grave attire start to exist but the settlement pattern does not suggest any regional forms of rulership. Instead social organisation on a smaller scale, governed by economic success could have been the starting point, leading to the later presumably hierarchic societies of the Iron Age.
Stone monuments have been used by people for many centuries, as a medium for expressing messages and ideals, and as a means of transforming the landscape. During the early medieval period, this tradition developed, and indeed flourished, principally at the north-western edges of Europe. With Christianisation, carved stones appear as a prominent part in the process, by embodying and expressing Christianity as part of identities chosen by elites, and to convey a message of power in the landscape. Both secular and religious elites from north-western Europe commissioned and erected stone monuments in the landscape for a variety of reasons: for example, as a memorial practice, or to convey a message of power over both the people and the landscapes they experienced, inhabited, traversed, and assembled in throughout their lives. The widespread nature of the erection of stone monuments thus lends itself particularly well to a comparative study. By situating these monuments within a macro-scale approach and placing them in a wider context, the individuality of stones, and their variations, can be analysed and further understood. This paper will thus present early Christian carved stones and rune stones from Ireland, Scotland, and Scandinavia using a three-level comparative approach developed in my recently completed PhD thesis, which consists in looking at and comparing the monuments, the landscapes they are erected in, and ultimately their role within the Christianisation process. The theme of movement in the landscape, and how it is created by the presence of early Christian carved stones, will be used as a common thread.
demonstrate transition over time. It will highlight how at key historic centres in Ireland early Roman influences became embedded into a syncretic Romano-Irish ritual practice, which in time paved the way for the adoption of Christianity in Ireland.

TH3-15 Abstract 05
Europe of the Regions? Sailing between Scylla and Charybdis on Europe’s Atlantic Arc

Author - Ó Ragain, Russell, University of Cambridge, Heidelberg, Germany (Presenting author)
Keywords: Early medieval Europe, Multiscalar perspectives, Theoretical archaeology
Presentation Preference - Oral

This paper will explore the epistemological and ontological validity of taking the various territories along Europe’s Atlantic seaboard as an area of study in the first millennium AD. It draws on some of the insights gained thus from an on-going wider collaborative research project on the Atlantic Arc in the first millennium AD with Patrick Gleeson, University of Newcastle, and Álvaro Carvajal Castro, University College Dublin. In keeping with the overall theme of the session, an attempt will be made to steer a course between various extremes usually portrayed as a series of binary oppositions, as evinced in the various particularist/generalist, -emic/-etic, structure/agency, micro-/macro- and exceptionalist/universalist debates across the social sciences, archaeology included. Different poles have attracted varying numbers of adherents in recent decades, as archaeology – and indeed the social sciences in general – lurched from one paradigm to the next. It is argued here that there is no single way of thinking about historical problematics our current (purportedly) epistemologically-anarchic academic milieu. None of these oppositions are as stark as might often be implied, rather they occupy the extreme ends of various spectra, more related to issues such as the spatial, temporal and/or evidential parameters of a scholar’s area of study, or to individual bias. The death of the grand narrative was proclaimed more than three decades ago, however, very little has been offered up as an alternative for scholars interested in change over time and/or on broad geographical scales.

Using the Atlantic Arc as a broader test-case, and more specifically my own multidisciplinary research on settlement in Ireland, Scotland, England and Norway within this wider area, a via media is proposed here. This ‘middle road’, adopted from post-structuralism, might be best termed might the ‘aggregate narrative’, a mediating, empirically-grounded collaborative approach, which brings together the work of several scholars working on smaller spatiotemporal scales or utilising different categories of evidence. This helps mitigate not only against the issues inherent in macro- level generalist approaches, but also those associated with over-adherence to the sorts of micro- level, particularist and exceptionalist approaches associated with the national archaeologies of various regions of Europe. It also helps mitigate against issues such as the relationship between nationalism/regionism and archaeology on the one hand, and on the other, the epistemological dissonance brought about by the use of different systems of classification.

TH3-16
TOWARDS DIGITAL INFRASTRUCTURES FOR OPEN, PARTICIPATORY, PUBLIC ARCHAEOLOGY

Thursday, 1 September 2016, 14:00-16:00
Faculty of History, Room 329

Author - Dallas, Costis, University of Toronto, Canada (Presenting author)
Co-author(s) - Degreave, Ann, Brussels Capital Region - Heritage Direction, Brussels, Belgium
Co-author(s) - Fernie, Kate, 2Cultures Associates Ltd., United Kingdom

Keywords: CARARE, digital archeology, Europeana

The Amersfoort Agenda of the European Archaeological Council, developed during its 15th annual symposium, identifies the need for concerted action to meet the objectives of the Council of Europe’s Framework Convention on the Value of Cultural Heritage for Society (Faro Convention) to secure the rights of people to access, participate, and benefit from cultural heritage and cultural life, and contribute towards its enrichment. This round table, taking stock of the insights from digital infrastructures such as Europeana and its CARARE network of archaeological and architectural heritage archives across Europe, will explore and debate how aggregated digital archaeological resources and the infrastructures supporting them can best serve the needs of a truly participatory and open social archaeology, enhancing and unlocking their value to foster citizenship, innovation, economic growth, employment and social cohesion. Understanding the potential value of digital archaeological infrastructures for diverse stakeholders including young people and children, the needs and opportunities they may offer for archaeological land management, education, tourism, research and the creative industries, as well as the promises and challenges of integrating social media, open curation, crowdsourcing, and semantic enrichment to enhance social access and participation to archaeological sites and data, will be among the topics to be discussed.
In scientific literature the term “Baltic region” is often used in either of two meanings: as the geographical region around the Baltic Sea; and as a cultural region of the Balts.

This conference theme on the Archaeology of the Baltic Region seeks interconnections of both meanings of the term “Baltic”. The remains of material culture and toponymical forms demonstrate that the influence of the Baltic cultures covered the territories from contemporary Moscow to the Oder river, and from contemporary Latvia to the Ukraine and overlaps with geographical region around the Baltic Sea. Cultural and technological interactions between these two regions were important factors in the formation of Northern, Eastern and Central Europe throughout the period of the 2nd millennium BC to the 16th century AD. However, various roles played by different cultures in the development of the region remain problematic, and were heavily influenced by the nationalistic narratives of the 20th century.

Fundamental questions about the formation of both “Baltic regions”, the interconnections between Baltic, Slavic, Finno-Ugric, Germanic cultures and the rest of Europe; the impact on formation of medieval Lithuanian, Russian, Polish, German, and Swedish states will be discussed in this Theme.

This Theme is dedicated to Maria Gimbutas (1921-1994), the world-renowned Lithuanian scholar who contributed immensely to the studies of the Balts as a part of the wider Indo-European phenomenon of the “Old Europe”.

**TH4-02 Abstract 01**

**The continuity of hillforts in long-term perspective: a case study from south-eastern Estonia**

*Author - Dr. Valk, Heiki, University of Tartu, Tartu, Estonia (Presenting author)*

*Keywords: chronology, hillforts, long-term perspective*

*Presentation Preference - Oral*

Hillforts have often been regarded just in the context of some definite time period – as power centres and important centres of the settlement pattern. However, not much attention has been paid to the network of hillforts as a phenomenon from a long-term perspective. The paper sheds light upon the question on the basis of a case study concerning the hillforts of south-eastern Estonia: how problem-based small-scale excavations with the aim to establish the chronology of sites were carried out on 31 hillforts, i.e. on almost all the sites, in 2015-2015. Until the late 20th century it seemed quite clear that hillforts emerged in south-eastern Estonia only since the beginning of the Viking Age. Archaeological excavations, both radiocarbon dates and finds, have, however, fully disproved the suggested model. It appears that hillforts emerged in the pre-Roman Iron Age already and were used in different time periods. However, the network of sites has greatly changed in the course of time. Many of the sites, especially those of the Early Iron Age, were of short-time use, sometimes also re-used. Only in a few cases the site was used over a long time period. The case of south-eastern Estonia enables one to suggest that dates and chronology of hillforts, based on only external features, and not proved by results of archaeological excavations, may be most misleading.

**TH4-02 Abstract 02**

**The evolution of hillforts in Lithuania according the C14 data**

*Author - Ass. prof. Zabiela, Gintautas, Klaipėda university, Klaipėda, Lithuania (Presenting author)*

*Keywords: C14 data, hillforts*

*Presentation Preference - Oral*

About 200 hillforts (from about 900 known) were investigated in Lithuania until 2015. According to the data, got in time of these excavations, was made the general evolution of hillforts. The main stages of development of fortifications were designed in basis of typological dating of archaeological artefacts. Until the last decade of this century the C14 data in Lithuania were made seldom
The application of geophysical investigations in Baltic hillforts

The environment of the Sambia hillforts according to the pollen studies

Signals of subsistence economy as revealed by pollen data: a case study from Lithuanian hillforts

Drilling the past - New approaches in dating hillforts in the Baltic region

The application of geophysical investigations in Baltic hillforts

TH4-02 Abstract 03

The application of geophysical investigations in Baltic hillforts

Author: Dr. Messa, Sebastian, German Archaeological Institute, Berlin, Germany (Presenting author)

Geophysical surveys conducted in the territory of Baltic hillforts (e.g. Taurapilis, Opstainiai/Vilkyškiai, Jakai) indicate the existence of structures that were not previously detected. In this context, geophysical methods can provide valuable information about the spatial distribution and extent of these structures, which is crucial for the planning of future excavations.

Keywords: Baltic Hillforts, Geophysics, Noninvasive methods

Presentation Preference - Oral

Since 2010 several archaeological sites have been geomagnetically surveyed in Lithuania. In the framework of this cooperation also several hillforts (Taurapilis, Opstainiai/Vilkyškiai, Jakai) have been investigated. In almost all sites features and structures could be detected that enable some initial statements on the structure and dimensions of this monument.

The geomagnetic data can be used differently: as basis for specific archaeological investigations – which have for example already been conducted in Taurapilis – and for the development of future concepts and strategies for the protection and preservation of these sites. The paper focus on the most exciting results of these surveys which will be presented and discussed during the talk.

TH4-02 Abstract 04

Signals of subsistence economy as revealed by pollen data: a case study from Lithuanian hillforts

Author: Dr. Stancikaitė, Miglė, Nature Research Centre, Vilnius, Lithuania (Presenting author)

Keywords: hillforts, Lithuania, pollen data

Presentation Preference - Oral

During the recent decades archaeological survey became important part of the archaeological investigations conducted on different chronological and spatial scale all over the Europe. Territory of Lithuania was not exception and pollen, plant macrofossil, diatom or phytolith analysis carried out in the environs of the hillforts. In most cases, these investigations were a part of complex interdisciplinary approach that provided scientists with complex information dealing with palaeoenvironmental, economical, chronological, cultural and etc context of the investigated monument and surroundings. During the 1.2 millennia AD. Herewith a new data revealing the peculiarities of the vegetation pattern, introduction and expansion of the cultural plants and etc context of the investigated monument and surroundings during the 1-2 millennium AD.

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as Radiocarbon-analysis are available only for a few monuments in Poland, Lithuania and Latvia, but they are absolutely absent for the Kainiogrād Region.

In the context of a bigger project on settlement archaeology, conducted by the Centre for Baltic and Scandianvian Archaeology in Schleswig and the Museum of Prehistory and Early History in Berlin and financed by the Academy of Sciences and Literature Mainz, the author developed a new strategy for the dating of hillforts. Using a motor driven drilling equipment for sampling datable material, especially for Radiocarbon-analysis, the ramparts of several hillforts in Lithuania and Russia have recently been investigated.

The paper gives an overview on the methodology and presents first results of the recent investigations.

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TH4-02 Abstract 08
Reconsidering early hillforts in the East Baltic: conflicts and metallurgy
Author - Podenas, Vytenis, National Museum of Lithuania, Vilnius, Lithuania (Presenting author)
Keywords: behavioral archaeology, early hillforts, spatial analysis
Presentation Preference - Oral

Recent research of archaeological finds and new discoveries in the Lithuanian museums encourage reconsidering the cultural phenomenon of emergence of hillforts in the Late Bronze Age. The basic assumption of this paper is that the emergence of hillforts are a behavioral expression of prehistoric conflicts. A contemporaneous process of appearance of locally executed metallurgy in the East Baltic region concentrates in hillforts as well. Thus making the two practices comparable.

With application of behavioral archaeology theory, the research of the formation processes of Narkūnai “Didysis” hillfort is presented as a case study with spatial analysis of household and technical ceramics, bone arrowheads and spearheads, and metal finds. Results suggest abandonment of the northern building with the concentrated sherds’ nests and bone finds. The analysis of aforementioned groups of finds is compared to recent research and spatial analyses by Latvian and Estonian archaeologists of archaeological context of Aza, Rūda and Kukutai hillforts. In addition, distribution of early hillforts and early metallurgy appears in the East Baltic region and its chronological character are analyzed.

Typologically most of the earliest finds from the hillforts are attributed to PIV-VI, with exception to the bone pins with nail-shaped head and Majdel type bronze pin that indicate a possible end of PIII. Casting moulds for socketed axes from Narkūnai, Garkalne, Skiraltis, Vosalgėliai and Brikuļi hillforts, and casting molds for spearheads from Asva, Brikuļi and Kukutai hillforts are one of the earliest evidences, dated to PIV-VI, of locally executed metallurgy in East Baltic region. The historiographical classic route of Daugava river seems to attract most of the early metalworkers. Casting moulds for Mālar-type socketed axes are an essential evidence of management of material resources in the hillforts. The latter casting moulds, like the rest of the technical ceramics types, are scarce, with similar amounts in Narkūnai and Kukutai and one newly found in the National Museum of Lithuania from Garmiai hillfort. However, the Mālar-type bronze axes are not specific to the East Baltic region, on the contrast the axes are mostly found in Scandianvian or in Upper Volga region of the inseparable Azorino-type axes. Furthermore, spatial analysis of Narkūnai hillfort technical ceramics indicate that the Mālar-type bronze axes have been casted on two different occasions, therefore making some ground for the itinerant metalworkers’ hypothesis. The aim of the paper is to reconsider the emergence and character of early hillforts in the East Baltic region concentrating the spatial analysis of bone, ceramic and metal artefacts, and the emergence of locally executed metallurgy as a relatable process.

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TH4-02 Abstract 09
Late Bronze Age hillforts in Pomerania: an overlooked problem
Author - Niedziółka, Kamil, University of Gdańsk, Gdańsk, Poland (Presenting author)
Keywords: hillforts, Late Bronze Age, Pomerania
Presentation Preference - Oral

Although hillforts identified with Lusatian culture, from the end of the Bronze Age and beginning of the Iron Age appear in vast areas no more than 10 km distant in Pomerania, basin Lower Oder region. This area is surprising, especially taking into account relatively numerous appearances of hillforts in Great Poland that is a region directly neighbouring with Pomerania from the south. On the other hand, investigations conducted in the 1960s to verify Pomeranian hillforts described as originating from Early Medieval and Medieval Period resulted in detecting at least at a dozen sites with materials from the latter Bronze Age.

The aim of this paper is to introduce the problem of alleged presence of Lusatian culture hillforts in the central part of Polish Pomerania. It is highly probable that this kind of settlements played an important role in interregional contacts between Eastern and Western parts of Pomerania, together with Great Poland. In wider perspective their role in the course and working of the Ancient route that the Bronze Age should also be taken into account and investigated. It seems that new tools available for archaeologists like GIS software and LIDAR data may bring a new opening and new perspectives in researching this case study.

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TH4-02 Abstract 10
Moving forward in the understanding of medieval ring-forts in Central Poland. Rozprze case study
Author - Dr. Sköra, Jerzy, Institute of Archaeology University of Lodz, Lodz, Poland (Presenting author)
Co-author(s) - Mr. Król, Piotr, Department of Geomorphology and Palaeoecography, Faculty of Geographical Science, Lodz, Poland
Co-author(s) - MA Wroniacki, Piotr, Independent researcher, Warsaw, Poland
Keywords: archaeological prospection, Early Middle Ages, ring-forts
Presentation Preference - Oral

Medieval ring-forts in Central Poland were a subject of archaeological interest since the 1930’s. Twelve features included in our projects were previously either partially excavated. These studies despite gathering new data regarding stratigraphy, chronology and material culture usually failed in bringing forth definite understanding of the ring-forts functioning in the landscape. Since the 1990’s along with the rapid advance of non-invasive methods new possibilities were opened up for the study of ring-forts and their landscape contexts. In 2013-2015 three projects based on combinations of non-invasive and geoarchaeological methods were undertaken. Multiple methods such as magnetic gradiometry, earth resistance, aerial prospection, Photogrammetry and using a simplified field method, analysis of archival aerial data, airborne laser scanning, intensive analytical field walking, RIGPS and Total Station surveys and geomorphological surveys along with geological mapping were carried out in order to provide possibly comprehensive and complementary data sets without archaeological excavations. All results were integrated in a digital environment based on open source GIS software. The project methodology allowed the collection of vast and significant new datasets as previously unrecorded information about the spatial structure of fortification features: additional rampant lines in Chelm, the course of not preserved ramps in Włocław and Rijeka, a developed moot system in Rozprze, a previously unknown second, smaller ring-fort in Stare Bieczowo. Traces of open settlements were also detected in the close vicinity of the strongholds. In each case the applied methodology helped to specify environmental determinants of settlement’s situation. The studies in Rozprze (ca. 60 km south from Lodz) were a prime example of new data categories that non-invasive approaches bring forth. Research was excavated in 1960s but revaluation of previous knowledge is now necessary. Remains of the Rozprze ring-fort defensive system are poorly preserved but still visible in the field as earstowes. Currently, the site occupies an area covered with meadows and fallow fields situated between the contemporary main channel of Luścica and Rajska rive in the central part of valley floor, but on the Prehistory aluvial terrace remnant. Non-destructive surveys of the ring-fort surrounding were carried out in 2013-2015. In 2015 the small-scale excavation phase began, combined with complex palaeoenvironmental research. It helped to detect the presence of a developed system of moats and ramps which appeared to be a palimpsest composed mainly of elements of a late medieval motte and bailey residence, which replaced an older, early medieval fort. The surveys revealed the existence of earthen and timber ramps as well as moats with a depth of up to 1.4 m with organic fill of gryta and peat and partially inorganic deposits with rich remains of woods as well as other organic materials. The results correspond to various geophysical anomalies and crop marks documented during aerial reconnaissance.

Acknowledgments. This research project was financed by three one-year grants from The Ministry of Culture and National Heritage No. 0161/13/FPK/ND (2013), 4962/14/FPK/ND (2014), 4962/14/FPK/ND (2015) and by a grant from the National Science Centre based on the decision No. DEC-2013/11/B/HS3/03785 (2014-2017).
The study deals with the sites of the early Iron Age in the area between the Oka and Volga (East European Plain). This area was inhabited by tribes of the so-called Dyakovo culture. The remains of the fortifications of these settlements are the ramparts and ditches located on the residential area and the perimeter of the scarp - construction settlements on the slopes. Number of lines of fortifications on each settlement varies. Usually it is 1-3 shaft and ditch. With the help of GIS analysis to determine the spatial patterns of the fortifications on the location of the ancient city. This study is to determine the functionality of the ramparts and moats, define local cultural centers. The research considered the organization of space in the settlements Dyakovo culture from the 8th century BC to the 7th century AD. The beginning of D’yakovo culture hill-forts dated to the end of sub-boreal climatic period which is characterized by climate cooling, compared with the previous, and the change of deciduous forests with fir. This period continuous to 500’s BC and covers the first phase of life in the hill-fort. Next climatic period Subatlantic characterized by even more cooling and moistening climate. It is falls on top of the second and third stages of life on the hill-forts. All settlements were divided into three layers corresponding chronological periodization. Stage 1 - 8th century BC - 6th century BC; stage 2 - 5th century BC- 2nd century BC; stage 3 – 1st century - 7th century AD.
There are over a thousand cairns on Gotland that has been discussed as burial sites belonging to the Bronze Age time and around 200 of these have monumental dimensions, ranging from 20 to 58 meter in diameter and 2.5-7 meter high. Only a few of these structures have been partly excavated and only one have so far been totally excavated with archaeological scientific methods. These cairns have so far only been discussed as burial sites but due to our recent archaeological excavations in relation to three of the largest cairn environments on Gotland (Uggarderojr, Digerrojr and Hägrör) and re-examination of the material excavated at Kaupaverjo new knowledge about these places have been generated. Our investigations show that these monuments go beyond the function as only burial sites. This paper present a new approach to analyse and discuss the ritual practices indicated by our recent excavation at these sites that allow us to understand them both as burial and ritual sites in a changing physical and ritual environment during several thousand years.

The aim of the project was to digitally re-construct the stone wall enclosure at Gothemshammar and to understand its location in the surrounding landscape. Excavations into the feature uncovered its internal construction details, as well as, dateable materials from domestic animals and charcoal. Fifteen AMS dates gave a clear and somewhat unsuspected age of the structure to the mid Bronze Age ca. 900-700 BC. The northern end of the wall is to be found at the end of a steep cliff, and since the southern end of the wall ended in an open slightly slanting terrain it suggested that it might have ended at the sea level when built to demarcate the surrounding landscape. Excavations into the feature uncovered its internal construction details, as well as, dateable materials. The results point to observable patterns in artefact distribution, with a preference for water bodies, wetlands and slopes. This implies not random losses, but Wilf deposition activity.

**Keywords:** Bronze Age, cairns, Gotland, Ritual Practice

**Presentation Preference:** Oral

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**TH4-04 Abstract 03**

**Patterns or randomness? Contextualising Estonian Bronze Age bronze stray finds on the landscape**

**Author:** Paavel, Kristiina, University of Tartu, Tartu, Estonia (Presenting author)

**Presentation Preference:** Oral

From Estonia, most large Bronze Age (1800–500 BC) metal items such as axes and spearheads have been found from non-settlement, non-burial context as single stray finds. In contrast, bronze finds from settlements and burial sites are small and of personal nature - tweezers, razors or clothing related items such as buttons. The connection of stray bronze finds with coeval settlement sites has been assumed on a few occasions. A couple of items have been associated with possible deposition in water bodies. The possibility of these stray finds being deliberate depositions on the landscape, as identified in large parts of Europe, including the Baltics, has until now been systematically unexplored. This phenomenon has been interpreted from different perspectives: sacrifice, conspicuous consumption, mundane safe-keeping, memory practice and the removal of valuables or objects with powerful life-histories from circulation. Seeking patterns in Estonian material required characterising the original deposition environments of individual find locations. To do so, I combined archive materials, topography, shore displacement data and information on soil properties. The results point to observable patterns in artefact distribution, with a preference for water bodies, wetlands and slopes. This implies not random losses, but Wilf deposition activity.

**Keywords:** Bronze Age, stray finds, Estonia

**Presentation Preference:** Oral

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**TH4-04 Abstract 04**

**Digital re-construction of a Bronze Age stone wall enclosure and the landscape at Lina Mire, Gotland**

**Author:** Associate Prof. Wallin, Paul, Uppsala Universitet, Uppsala, Sweden (Presenting author)

**Co-author(s):** Martinsson-Wallin, Helene, Uppsala Universitet, Uppsala, Sweden

**Co-author(s):** Wahlén, Joakim, Dalarnas Museum, Falun, Sweden

**Co-author(s):** Sandelin, Anders, Sandelin Animation, Stockholm, Sweden

**Keywords:** Bronze Age, Re-construction, Wall enclosure

**Presentation Preference:** Oral

The aim of the project was to digitally re-construct the stone wall enclosure at Gothemshammar and to understand its location in the surrounding landscape. Excavations into the feature uncovered its internal construction details, as well as, dateable materials from domestic animals and charcoal. Fifteen AMS dates gave a clear and somewhat unsuspected age of the structure to the mid Bronze Age ca. 900-700 BC. The northern end of the wall is to be found at the end of a steep cliff, and since the southern end of the wall ended in an open slightly slanting terrain it suggested that it might have ended at the sea level when built to demarcate a point in the landscape. We therefore reconstructed the water level using LiDAR data indicating that the former sea level at mid Bronze Age could be set at about 10 m above the current sea level in this area. To place the wall enclosure in its Bronze Age context we also plotted other features tied to the same time, such as stone ship settings, cairns, other wall enclosures, and known hoards into the re-constructed landscape. It then became quite evident that points, small islands, and the coastal locations was of great importance for the location of these monuments and that Lina mira must have been an important “port” for Bronze age communications, internal as well as external, and Gothemshammar was strategically located at the entrance of this water system.

**Keywords:** Bronze Age, Digital re-construction, Wall enclosure

**Presentation Preference:** Oral

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**TH4-04 Abstract 05**

**Between Social Dynamics and Cultural Constancy. Case Study of the Trzciniec Culture**

**Author:** PhD student, Agne, Zilinskaite, Vilnius University, Vilnius, Lithuania (Presenting author)

**Keywords:** Bronze Age, pottery, Trzciniec Culture

**Presentation Preference:** Oral

The appearance of the Trzciniec Culture (Trzciniec Cultural Cycle) in Lithuania and its role in the formation process of Bronze Age cultures is still a controversial question at the present stage of research. The investigation of this culture started only a few decades ago even though Trzciniec culture artefacts have been known in Lithuania for a long time. The archaeological material of this culture is known from almost 20 sites in current Lithuanian territory. Individual pots, clusters of pot sherds and tambov finds are usually found on these long-term lived sites. The ornamental motifs on the pottery in all the groups of Trzciniec Culture are the most important criterion for identification. However, the conspicuous influence of neighboring simultaneous cultures can be seen in this pottery. Its background was no doubt Globular Amphora and Corded Ware Cultures with influences of the Narva and Nemunas Cultures in Lithuania.

There are more individual sites which scattered over the northern area far from the main Trzciniec Culture territory (Lithuania, Latvia, Kalingrad district). One may reasonably ask how these finds should be evaluated as ‘islands’ of Trzciniec culture (1), as a reason to include Lithuania in the Trzciniec culture’s range (2) or as the result of the influence or penetration of cultures linked to this culture (3).

Therefore, the Trzciniec culture in Lithuania’s territory could be treated as one of the most influential phenomena of the Middle Bronze Age. This paper analyses various aspects of the concept and chronology of the culture and presents a history of the research in the culture’s territory. Priority is given to archaeological pottery, the main indicator for cultural identification. In addition, this paper analyses the Bronze Age cultural situation in the Eastern Baltic region and raises the question of whether the Trzciniec culture existed in Lithuania and in what form.

**Keywords:** Bronze Age, pottery, Trzciniec Culture

**Presentation Preference:** Oral

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**TH4-04 Abstract 06**

**Coastal and northern Lithuania in the Late Bronze Age – communication networks and interactions**

**Author:** Assoc. prof. Merkevičius, Algimantas, Vilnius University, Vilnius, Lithuania (Presenting author)

**Keywords:** Bronze Age, cultural contacts, materiality

**Presentation Preference:** Oral

The Late Bronze Age, from around 1200 BC, was a time of significant cultural changes in Lithuania and in the whole East Baltic Region, especially in the coastal zone and around Daugava River. A new culture elements, such as some type of graves, pre-Celtic fields, cup-marked stones, stone enclosures, metal artefacts (Mair type axes, miniature daggers and others) shows contacts and interactions in the Baltic sea Region. Some of new culture elements are the result of external influences from coastal zones of the western and southern Baltics. Distribution of new type of sites and artefacts suggests communication networks in the Baltic sea Region. One of the trade route was established at the beginning of the first millennium BC and functioned between central Sweden, Gotland, east Baltic Region (Daugava route) and northeast Russia in the first half of the first millennium BC.

The aim of the paper is to discuss communication networks and nature and scale of interactions in the Baltic Sea Region in the Late Bronze Age.

**Keywords:** Bronze Age, communication networks, Baltic Sea Region

**Presentation Preference:** Oral

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**TH4-04 Abstract 07**

**Materialised and non-materialised contacts in Bronze-Age Eastern Baltic**

**Author:** Professor Lang, Valter, University of Tartu, Tartu, Estonia (Presenting author)

**Keywords:** Bronze Age, Finno-Baltic contacts, long-distance contacts

**Presentation Preference:** Oral

Archaeology as an academic discipline studying material culture can easily follow contacts between people from different regions if some evidence has been left behind – usually something material which can be studied by scientific means. There are numerous examples of bronze artefacts found, for instance, in what is today Estonia that demonstrate long-distance contacts with the mid-Volga region, the Caucasus, Scandinavia, etc. We know about these contacts because of some materialised witnesses. There is no doubt that each item of foreign origin must be carefully studied in order to avoid the trap of a novice detective – everything that seems evident at first sight need not be true. The presentation will discuss several artefacts with the purpose of analysing the probable nature of contacts that yielded those items.
But what about those contacts that did not leave any material evidence behind? Actually, archaeology can sometimes be quite inefficient in trying to describe the wholehost of contacts between two neighbouring (ethnic) groups. For instance, there is not much preserved materialised evidence to prove close contacts between Finnic and Baltic communities in the Bronze Age, Eastern Baltic. Yet, linguistic evidence in the face of numerous so-called unnecessary or luxury Baltic loanwords in Finnic clearly shows that the contacts between two groups from different language families were really dense and long-lasting, and even mixed settlement with bilingual everyday communication must have been widespread. This circumstance provides every good reason to think that material cultures of Finnic and at least one part of the Baltic-speaking populations was not distinguishable from each other. The presentation is an attempt to search for such a period, region, and material culture that could correspond to linguistic – that is, non-material – evidence of a mixed bilingual population.

TH4-04 Abstract 08

Landscape transformations at the turn of Bronze and Iron Age at the southern coast of Baltic Sea

Author - Niedziółka, Kamil, University of Gdańsk, Gdańsk, Poland (Presenting author)

Keywords: Eastern Pomerania, human impact, Pomeranian culture

Presentation Preference - Oral

According to the archaeological data, intensive cultural changes took place in Eastern Pomerania (Northern Poland) at the end of the Bronze Age and at the beginning of Iron Age. From the point of view of traditional archaeology, these changes were connected with the origins of Pomeranian culture, which had developed on the background of local group of Lusatian culture, identified with Umfeld tradition. Appearance of Pomeranian culture was tied with new patterns in burial rite: people started to put ashes of their deceased in impressively big urns with images of faces (so-called face urns) which afterwards were buried in a cist graves. In contrast to the previous rite, Pomeranian culture cemeteries were smaller but more numerous - the dense network of flat burial grounds covered Eastern Pomerania. On the other hand, large barrow cemeteries from the end of the Bronze Age ceased to be used. This may indicate that these changes must have had a strong impact on the local cultural landscape. Moreover, basing on the pollen analysis it is visible that Finnic people influenced on the natural environment, what can be linked with their economic activity.

The main aim of this paper will be presenting an idea undertaken to reconstruct natural environment together with the cultural landscape of Eastern Pomerania and attempt to answer the question – how intensive and what kind of influence on the local surroundings had societies from the Late Bronze and Early Iron Age.

It is obvious that new tools which are available for archaeologists, such as GIS software, LiDAR data and modern aerial photography, together with results of palaeoecological studies offer a significant support in researches conducted on the Late Bronze and Early Iron Age landscape of Eastern Pomerania. It could also give a good background to present described changes from a wider – cultural, social, and environmental perspective.

TH4-04 Abstract 09

Mid-Pre-Roman military impact on the northern Eastern Baltic

Author - Professor Lang, Valter, University of Tartu, Tartu, Estonia (Presenting author)

Keywords: foreign impact in East Baltic, fortifications, Pre-Roman Iron Age

Presentation Preference - Oral

It seems rather plausible that the fortifications, iron (battle-)axes, and shepherd’s crook pins reflect different aspects of the same process, which most likely involved troubled times and even some military impact. It is likely that some groups of invaders of Indo-European or Baltic-Slavic origin may have infiltrated into the Finnic population during this process.

The main aim of this paper will be presenting an endeavour undertaken to reconstruct natural environment together with the cultural landscape of the area of the Northern Baltic and attempt to answer the question – how intensive and what kind of influence on the local surroundings had societies from the Late Bronze and Early Iron Age.

It is obvious that new tools which are available for archaeologists, such as GIS software, LiDAR data and modern aerial photography, together with results of palaeoecological studies offer a significant support in researches conducted on the Late Bronze and Early Iron Age landscape of Eastern Pomerania. It could also give a good background to present described changes from a wider – cultural, social, and environmental perspective.

TH4-04 Abstract 10

Crown Torque from Jamlitz

Author - Vorotinskaya, Larissa, The State Hermitage Museum, St. Petersburg, Russian Federation (Presenting author)

Keywords: Germany, Kronenhalsringe, spectral analysis

Presentation Preference - Poster

The State Hermitage keeps the crown torque from Jamlitz, Lkr. Beeskow, north-eastern Germany. It had been found by accident while plowing a field, then bought in 1925, and subsequently kept by the Berlin Museum (Staatliche Museen zu Berlin Nr II 10965). Today, the torque is part of the collection moved from Germany after the Second World War.

The Torque is one of the so-called Kronenhalsringe, mainly found in Denmark and Northern Germany. The few findings of such crown torques are known to have been made in Poland, Romania and Ukraine. An accumulation of at least seven items was discovered in the area of Leski and Grabiay villages in Podoleysn, Chernigov Region. Nearly in all cases, the findings were made in swampy areas and were apparently of votive nature. Apparently, these items belong to the German Jastorf Culture that existed in Northern Germany and Denmark. In Eastern Europe, such findings are probably due to the relocation of the Germans to the east.

The Jamlitz crown torque is type IV according to Jochen Brandt’s classification and probably dates back to Step 1C according to M. Schuchl (i.e. the last quarter of the 3rd century BC – first half of the 2nd century BC). According to Bjorn Rauchfuss, the torque belongs to shape 2. Crown torques with an oval, almost quadrangular cross-section.

Parts of the Jamlitz torque and the pivot pin were cast from wax models. The hole for the pin was made in the wax model and subsequently refined on castings. The casting was followed by further finishing. Obviously, this torque was originally defective, since the lock does not close, and parts of the lock are poorly fit to each other. The torque opens up and cannot be used for its designated purpose. This is characteristic of the Jamlitz torque. Similar items from Podoleysn close perfectly, and the lock keeps the parts of the ring together.

The Department for Scientific and Technical Examination at the State Hermitage carried out spectroscopic analysis of the Jamlitz crown torque’s metal using a Bruker Art/TAX RF fluorescence spectrometer. The torque is made of tin bronze with a considerable admixture of lead.

This data is consistent with that of the analysis of the crown torques from Zaleje (Ternopol Region, Ukraine), Lichosledt (Pavlovka, Kalinin Region) and Mecklenburg, with the ratio between the main elements used in the metal alloy (copper, tin and lead) varying to a rather large degree.

TH4-04 Abstract 11

The Early Roman Iron Age site at Eilinniitty, Rauma Finland

Author - PhD Uotila, Karl, Muurutikus, Kaarina, Finland (Presenting author)

Keywords: digital documentation, early Iron Age, iron finds

Presentation Preference - Poster

During the years 2010-2015 of field studies both ground-penetrating radar and aerial photogaphing with a drone were tested. Documenting of the cairns was mostly done with laser scanning technique. This is the largest 3D-documented Early Roman Iron Age site in Finland.

The site was 3.5 hectares and it was surveyed in several phases. New cairns were found from the forested terrain during each phase of the last phase of excavations the whole hill was opened with a digger, which revealed about 250 cairns. Based on the data the total amount of cairns can be estimated to have been about 300 and about 200 of these have been man made.

From between the stone mounds a concentration of over 2500 mortar-pottery shards was found. This has been interpreted as a part of a settlement site. In this area also pieces of burned bone were excavated. From them bones of fish, seal and one bone from either a sheep or a goat were identified. Macrofaunal analysis revealed seeds of barley and wheat.

The most surprising finds were two iron bracelets, two pieces from iron knives and two small pieces of iron. These were all found from a cairn located at the highest outcrop of rock in the area. The cairn was covered with red sandstone slabs. There was also another cairn which was covered with sandstone slabs in the area but it revealed no finds.

The iron bracelets are a very rare find from an Early Roman Iron Age site in Finland and they suggest connections to the Baltic region.
Pre-Roman Age tarand graves - trends and specialities

Author: MA Kivińüü, Anu, University of Tartu, Tartu, Estonia (Presenting author)
Co-author(s): Olli, Maarja, University of Tartu, Tartu, Estonia

Keywords: Burial rituals, Pre-Roman Iron Age

Presentation Preference: Poster

The poster will concentrate on a handful of case studies of Pre-Roman Age tarand graves and intends to map the influences and trends that have led the mourners to build these monuments, bury their dead either cremated or inhumed, and to choose and place the items suitable for the grave.
In Holy on Lolland, a chieftain's grave from the Early Roman Iron Age was found in 1920. The grave is one of the richest dating back to this period from Northern Europe. In 1999, pottery and black soil were observed in the area NW of this rich grave, and minor excavations in 2000-2001 revealed a settlement from the same period as the richest graves in the area. In the period from 2010 to 2015, larger excavations have been carried out in the settlement and activity area. These investigations have been carried out in collaboration between the Museum Lolland-Falster, Center for Baltic and Scandinavische Archaeology (ZBSA), and the National Museum.

The settlement and activity area cover an area about 100x150 meters (328x492 feet), and about a third of this area has been excavated up to now. On larger parts of the Holy settlement, culture layer is preserved in a thickness of up to 0.6 meters (1.9 feet). It contains large amount of pottery and preserved animal bones besides the remains of clay floors. The preliminary studies show that the building at Holy represents a large community/village. The long houses are located in EW rows. To the North, the settlement is bordered by an activity area with a large water-filled pit surrounded by numerous smaller pits, deposited bone material, and wooden structures. The activity area and the house constructions are contemporaneous.

In this present paper, the settlement will be presented, and the current state of our research concerning settlement structure, economy and cultural perspectives will be presented. Finally, the results are compared to some of the contemporary settlements from current Danish territory.

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TH4-05 Abstract 03
Rosenholmvej: a central site in Middle Jutland
Author: Olsen, Martin, Winther, Museum Midtjylland; Herning, Denmark (Presenting author)
Keywords: Central settlement, Lübsowgraves
Presentation Preference - Oral

Central settlement and hinterland – life and death in the 1 Century AD. A complex of rich graves, farms and villages in the central part of Jutland.

Museum Midtjylland has excavated a number of sites that all relate to an extraordinary rich site, Rosenholmvej. This central site is a settlement that covers most of the period from 500 BC through 200 AD, but with a "highlight" in period B 1a. At this time a grave yard is constructed which includes a number of extraordinary rich graves with gravegoods and constructions that place them in a superlative place. It links them to other regional groups in Denmark, Europe and to the political turbulence we see in those years. At the same time, this group of people expresses their status in the constructions of the "farmstead" that is in every respect extraordinary, with features that both illustrate their social, regional and international status.

Additionally, we do have a number of sites in the "hinterland", some are excavated and others known through geophysical surveys. This group includes both settlements as well as graveyards. Hereby we get an insight into an organization that is highly synchronized.

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TH4-05 Abstract 04
Studying the Iron Age Settlements in Lithuania: Current Issues and Future Directions
Author: Dr. Vengalis, Rokas, Lithuanian History Institute, Vilnius, Lithuania (Presenting author)
Keywords: prehistoric settlements, settlement pattern, survey
Presentation Preference - Oral

The research of the Iron Age in Lithuania (which is dated to the 1st millennium A.D. according to the periodization of this region) was focused only on the ethno-history for a long time and that was the reason why the attention of archaeologists was directed to the studies of the burial sites. Because of such trend we could say very little about communities of that period, except for their ethnicity. There was some knowledge about the social structure, trade directions and ideology as well, but practically there was no information about the subsistence, the economy, settlement patterns and other themes. In recent decades this trend begins to change little by little – researchers begin to take interest in topics which were not analyzed before and at the same time the attention is drawn to the fact that the material which we collected up to now does not allow to analyse the newly emerging issues.

This report presents the research problems concerning Iron Age Settlements in Lithuania and provides the examples of how these studies, though still sparse, significantly change the understanding of these communities.

There is a challenge encountered in attempting to analyse the intra-site structure of settlements. For example, site analysis is faced with problems, such as chronology, pottery typology and its correlation with chronology, identification of buildings, etc. This report presents an example from Kernavė settlement which shows that we can obtain valuable data applying new methods by researching the material of research from previous decades. The application of spatial analysis shows quite different settlement structure than was thought previously – the settlement was not solid but consisted of segregated farmlands, which changed their location over the course of time. Such data allows to draw some conclusions about the social structure of communities, subsistence, economy etc. and raise further questions for future research. Considering settlement pattern analysis, the main problem is associated with the representativity of archaeological sites. Until now, no one ever conducted purposeful survey looking for the settlement sites in Lithuania and only several of such sites were registered. Settlement pattern was basically reconstructed by burial sites, therefore the impression of a very sparse settlement of that period became dominant. The recent survey, which focused on the search for settlement sites in Kernave region, indicated that in fact the situation was quite different. The recent survey showed that the settlement pattern was at least somewhat denser. This now provides opportunities for settlement density, settlements size, stability, and similar aspects. This report concludes that the systematic settlement research in Lithuania, even though they are still in the initial stage, contribute very significantly to the overall formation of the image of this period, which until now was based essentially only on data from burial sites. In order to achieve tangible results, the wide range of information not limited to certain type of sites must be used.

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TH4-05 Abstract 05
An attempt to define ratio of barrow cemetery and settlement site in term of community size
Author: - Dr. Strimaitiené, Andra, Lithuanian History Institute, Vilnius, Lithuania (Presenting author)
Keywords: barrow cemetery, rural communities, settlement site
Presentation Preference - Oral

The material culture of the Iron Age represented by the artefacts coming from burial monuments is relatively well known for the archaeologists; however, information on the local communities which left this legacy is rather scarce. One of the main characteristics describing any human community is its size. Usually, the size of the community is identified on the basis of the data derived from the burial monuments. However, there are other methods of establishing the size of the community on the micro-level, as well: for instance, they include area estimates or dwelling-based estimates. In ideal cases, data derived from different types sites forming archaeological complexes should be correlated for the demographical analysis.

The region of eastern Lithuania is an area with very frequent occurrence of barrow cemeteries of different size, ranging from one to tens and hundreds of mounds, which suggests (apart from being impacted by destruction) the communities of different size. On the contrary, the number of known settlement sites is rather low. The settlement research is still very fragmented and limited to small-scale excavation producing small and biased samples. At best, only the location of a settlement site can be identified approximately. This situation is, in turn, causing the non-presence of cultural layers inside and therefore the total site space remains un-established for most cases. As a result the ratio of barrow cemeteries and settlement sites has been rarely investigated not only in terms of community size, but even how to mutually interpret the overall pattern of evidence. This presentation attempts to contribute to the issue of estimating the size of rural communities not only in terms of the absolute index, but rather seeking to prompt the comparative studies of data from different types of archaeological sites. To illustrate the approach, the archaeological complexes consisting of a barrow cemetery and a settlement site were distinguished in the study. The eastern Lithuanian Barrow Culture and one relatively well preserved and excavated complex was chosen for the further case study. Analytical tasks were as follows: 1) to define the possible extent of the settlement site by combining tradition archaeological methods with geo-archaeological research data and micro-topography; 2) to assess the resultant area against the density coefficient, deriving this coefficient: a) from the data of excavated sites; b) from the data of excavated settlements with well-defined structural pattern from neighbouring countries.

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TH4-05 Abstract 06
Relation or isolation? Spaces of the living and the dead in the Iron Age East Lithuania
Author: - Dr. Kurias, Laura, Lithuanian Institute of History, Vilnius, Lithuania (Presenting author)
Keywords: barrow cemetery, East Lithuania, hillfort
Presentation Preference - Oral

The cultural landscape of the Roman period – Viking age (or the Iron Age, c. 5/4th-11/12th centuries AD) East Lithuania is represented mainly by barrow cemeteries and hillforts. Presently, over 500 barrow cemeteries and over 350 hillforts are known in the territory of the so-called East Lithuanian barrow culture (this is only in the territory of the present-day Lithuania, as precise data about Northwestern Belarus are lacking), and there had been many more in the past.

Both barrow cemeteries and hillforts have received a great deal of attention in Lithuanian archaeology, but until now they are viewed as isolated rather than related to each other. In other words, the spaces of the living and the dead are perceived as two different worlds rather than an arena of permanent interaction. The fact that very few flat settlements of this period are yet known does not contribute to research, but this can be advanced only by large-scale surveys, and this is a task for the future. Another barrier is the lack of research on a microregional level aimed at complexes of hillforts and barrow cemeteries. Rather rare instances of barrow cemeteries being located near hillforts have suggested a stereotype that spatial distributions of both types of the sites are rather independent.
A changing community in north-east Estonia
from 400 BC to 900 AD

Author - PhD student Olli, Maarja, University of Tartu, Tartu, Estonia (Presenting author)
Presentation Preference - Oral

Aakre Knivvare complex is an interesting archaeological site in north-east Estonia which was settled continuously over 1000 years during the Iron Age. There is a monumental stone grave, at least two settlement sites, a hill-fort with two stages and a possible flat cremation cemetery very near each other from different time periods.

It is possible to study the change of burial customs, cultural and trade contacts as well as pieces of everyday life of the prehistoric community from the Pre-Roman Iron Age until the end of the Viking Age based on the Aakre Knivvare complex. Because most of the sites have been excavated, it can be assumed that the place was a centre of a larger region during the 13th century. Therefore assumptions of a larger society of the time periods can also be made.

The chronology, characteristics of the monuments as well as items excavated from the sites will be discussed. Based on that, assumptions of the changing identity, religion and cultural and trade contacts of the community will be made.

TH4-05 Abstract 08

Searching for links between artefacts from areas of prehistoric dwelling sites and burial grounds

Author - Dr. Banyte Rovell (Rowell), Rasa, Lithuanian Institute of History, Vilnius, Lithuania (Presenting author)
Keywords: burial grounds, dwelling sites, Roman Period
Presentation Preference - Oral

This paper surveys categories of finds that were found in Roman Iron Age dwelling sites and in burial grounds in Lithuania. Grave-goods belong to the sphere of sacrum where property donated for the dead might reflect a distorted picture of reality. Grave-goods are the result of creative activity performed in “real life”. Therefore finds from dwelling sites have great importance for connecting artefacts from burial grounds back to sphere of profanum. We can seek answers to where the production of tools and ornaments took place.

Another interesting question is whether the regional shapes/types of artefacts, usually placed on maps according a database of burial sites are distributed in a similar way in the settlement pattern of the same territory. Such a comparison raises the question of whether regional ornament styles were created under the influence of “the regional taste” of several artisans of a particular region and that process reflects the existence of a regional identity. Or perhaps these regional features had a more practical origin - the distribution of particular types in particular regions was outcome of network of trade and range of influence of production centres on the market.

West Lithuania was an area where Roman coins were placed in graves during the Late Roman period (end of phase C1a – phase C1b). This tradition testifies to the importance of the Lithuanian coastline for the maintenance of far-flung contacts with the Roman provinces. It is interesting that Roman coins have been found in the cultural layers of hillforts and settlements in Žemaitija and Central, Southern and Eastern Lithuania while the tradition of placing Roman coins in burials is almost absent. The latter finds testify to the circulation of Roman coins in all regions of Lithuania and such finds in dwelling sites leads us to consider their function in everyday life. Roman-Iron Age finds in dwelling sites in Eastern Lithuania have especial importance because the database of burial sites from this period is still small. They reflect the fact that Eastern Lithuania, despite its location in the Balt hinterland, was a region where various cultural influences from neighbouring areas and the European Barbaricum made an impression upon local traditions.

Summarising, it is possible to state that a comparison of finds from dwelling sites and burial grounds may provide new insights into the prehistory of the Balts during the Roman period. Therefore it is important to integrate the databases originating from the spheres of sacrum and profanum.

TH4-05 Abstract 07

Brothers-in-arms. Interregional contacts of the Balt warriors in the Roman and Migration periods

Author - Dr. habil. Kontry, Bartosz, University of Warsaw, Warszawa, Poland (Presenting author)
Keywords: Balts, Roman Period, weapons
Presentation Preference - Oral

The paper deals with the weapons from the West Baltic cultural circle showing their parallels and foreign inspirations. Basing on the archaeological grounds the author presents the general model of the Baltic weaponry with its specific traits (axes, socketed axes, possibly wooden shield bosses) and further on tries to find its elements in non-Balt regions, e.g. Scandinavia. This phenomenon is then observed on the cultural background, i.e., wars, migrations and changes in cultural structure in the Baltic Sea area. This leads to the conclusion that the Balts participated in particular international military events which was favorable for exchange of technical solutions as well as in the field of tactics and symbolism.
TH4-06 Abstract 02

The affect of Landscape Scale Forcing Factors on the Earliest Neolithization in the Baltic Basin

Author - Troksiisky, Christopher, University at Buffalo, Cheektowaga, United States of America (Presenting author)
Keywords: Climate Change, Cultural Interaction, Neolithization
Presentation Preference - Oral

Understanding the underlying mechanisms for the "Agriculturalization" of Mesolithic Hunter Gatherer cultural groups has long been one of the great problems to be solved in Northern European Neolithic studies. This problem is especially difficult to reconstruct in the Baltic Region where traditional explanations of migration, diffusion, leasing and demographic pressures break down in the face of exceptionally slow temporal development of the Neolithic Paradigm Shift in culture across relatively small geographical distances.

In this paper a modification is made to Marek Zvelebil’s Homo habitus model, were used to verify the hypothesis that for the case of the formation of the Funnelbeaker (TRB) on the Kajavian Plain the substitution phase of agricultural adoption is short relative to the phases of agricultural availability and agricultural consolidation because it was triggered by landscape level forcing events of various intensities and durations.

Furthermore it is posited that the contemporary dissolution of the Lengyel complex in the region resulted from greater affect due to culturally specific vulnerabilities with respect to these forcing factors than their hunter-gatherer counterparts. This can be seen in the distribution of intercultural agency markers in the material culture and settlement systems of the local TRB fusion group composed of a mix of the remnants of the Lengyel complex and neolithized hunter gatherers.

TH4-06 Abstract 03

Neolithic Cultural Encounters in the Territory of the South Lithuania (4200-2000 BC)

Author - Marcinkievičiūtė, Aija, Department of Historical studies, University of Gothenburg, Gothenburg, Sweden (Presenting author)
Keywords: cultural encounters, Neolithic hunter-gatherers, South Lithuania
Presentation Preference - Oral

Till the end of 20th century southeastern part of the Baltic region was interpreted as periphery of the neolithisation centers in central and Western Europe. Neolithisation also Indo-Europeanisation process was explained with Late Neolithic colonization of Corded Ware culture (Battle Axe culture) warriors, who assimilated autonomic hunters-gatherers.

Archaeological and multidisciplinary research over the last 15 years denied the approach of dynamic evolution, revealed intensive mobility and interaction among various sociocultural groups of hunter-gatherers and farmers. In the territory of the South Lithuania cultural encounters appear to have been the most intensive. Favorable geographical conditions and raw flint found in a surface of the area caused an emergence of numerous multilayer settlements of hunters-gatherers. Archaeological material of Dubičiai, Nemunas, Narva and maybe Comb-Ware cultures also pottery of Funnel Beakers, Globular Amphora, Corded Ware cultures was found in this territory. The most of the sites were settled in a sandy soil which is unfavorable for preservation of organic materials, also flint artifacts of different chronological complexes are mixed in this kind of environment. Nevertheless, by applying palaeo-geographical environment reconstruction, spatial-statistical analyses and correlating data of radiocarbon analysis, research of landscape micro-topographical, floriferal and faunal features as well as ethno-archaeology and experimental archaeology patterns, it is possible to extract and date different complexes, define activities of subsistence economy and behavior of the societies.

TH4-06 Abstract 04

Pottery traditions and cultural processes in the Gulf of Finland region in the 3 mil. BC

Author - Postgraduate Kholkina, Margarita, Saint-Petersburg State University, Saint-Petersburg, Russian Federation (Presenting author)
Keywords: Gulf of Finland region, Late Neolithic - Early Metal Period, Pottery
Presentation Preference - Oral

The eastern part of the Gulf of Finland region is rather important for the study of cultural and historical processes of the end of IV - III millennium BC. This territory from the ancient time was located in a contact zone among the areas of different archaeological cultures and pottery traditions. During the mentioned period, which in Russia is usually called the Early Metal Period (EMP), bearers of Comb and Corded Ware pottery traditions coexisted here. The area was peripheral for both of them. Current study is devoted to the reconstruction of cultural and historical processes, reflected in ceramic material. Among the sources of the study there were fragments of more than 200 vessels from 36 archaeological sites from the eastern part of the Gulf of Finland region.
TH4-06 Abstract 09

Re-thinking Bourdieu: New Perspectives on the Pitted Ware Culture on Gotland in the Middle Neolithic

Author - Dr. Andersson, Anna-Carin, University of Gothenburg, Gothenburg, Sweden (Presenting author)

Keywords: Bourdieu, Method, Pitted Ware Culture

Presentation Preference - Oral

This paper relates to the issue: what impact does developed archaeological methods and results generate on traditional interpretations of mobility and cultural encounters? The aim is to present a new method of interpretation, which I have developed in my thesis. The method has its foundation in a re-think and an archaeological adaption of the concepts and reasoning of the French sociologist Pierre Bourdieu. Such application and adaption of the concepts of Bourdieu on an archaeological material as is suggested, has previously never been done before. Though the reasoning of Bourdieu have been used in studies of archaeological material, an examination of a number of these earlier studies surprisingly revealed a simplified use of the concepts, where insufficient considerations have been taken to the complexity of Bourdieu’s reasoning. The most common approach in previous research is to only use Bourdieu’s concept of Habitus, which is used without contextualization and according to the ad hoc principle. Through an adaption of the concepts in accordance with a contextualization of the living conditions and the

TH4-06 Abstract 08

The enigmatic Dolmen on the Island of Gotland

Author - Frasier, Magdalena, Uppsala University, Campus Gotland, Visby, Sweden (Presenting author)

Co-author(s) - Sanchez Quinto, Federico, Evolutionary Biology Centre, Uppsala University, Uppsala, Sweden

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Co-author(s) - Jakobsson, Mattias, Evolutionary Biology Centre, Uppsala University, Uppsala, Sweden

Keywords: Genomics, PWC, TRB

Presentation Preference - Oral

TheAnsarve Dolmen in Tolfta Parish on Gotland is the eastern most of its kind in Scandinavia. Dolmens and passage graves in Northern mainland Europe are associated with the Funnel Beaker culture (TRB) and several activity sites with TRB pottery have been located on the island from the Early Neolithic time period. We present new radiocarbon dating and isotope results, which show that the Dolmen was used for an extended time period, yet contemporary archaeological remains from the Funnel Beaker culture are scarce on the island at a time when the Pitted Ware culture was widespread along the coastal areas. Previous genomics research has indicated that hunter-gather individuals from the Middle Neolithic Pitted Ware culture on Gotland had different biogeographic affinity to that of contemporary TRB individuals from the Swedish mainland (Bøggild et al. 2012; 2014). Here we use genomics to investigate the relationship of individuals from these two different cultural contexts on the same island, over time.

TH4-06 Abstract 07

Human-animal relationships and identity expressions at Zvejnieki cemetery (north-eastern Latvia)

Author - MA Macāne, Alja, University of Gothenburg, Göteborg, Sweden (Presenting author)

Keywords: human-animal relationship, hunter-gatherers, burials, Zvejnieki, Latvia

Presentation Preference - Oral

The Neolithic cemeteries around the Baltic Sea reveal complex burial practices. Zvejnieki (north-eastern Latvia) is among the largest hunter-gatherer cemeteries in the Baltic Sea region. This presentation will explore the expressions of hunter-gatherer identities through ritual practices based on new osteological analysis of the animal remains in the grave fills. This research is part of a PhD project that examines how animal and human worlds co-existed, confronted, and affected each other during the Stone Age in the Baltic Sea region. The relations between humans and animals and their encounters from a perspective of materiality and posthumanism could question the dominant position of humans. The choice of the personal adornments, combination of animal species and fragmentation of body parts appear to have significant importance when burying the dead in Zvejnieki. In contrast to previous research on hunter-gather-burials, which concentrated solely on humans, this project provides a complementary perspective that stresses a more holistic view by looking at the animal remains. This will develop a deeper understanding of the relationship of humans towards animals during the Stone Age.

TH4-06 Abstract 06

Three Anthropomorphic Clay Figurines from Vantaa Jokiniemi, S. Finland

Author - MA Fast, Jan, University of Helsinki, Esbo, Finland (Presenting author)

Keywords: Baltic Sea region, Comb Ceramic Culture, Settlement interaction

Presentation Preference - Oral

In July of 1990 an extremely detailed and realistic head torso of an anthropomorphic clay figure was found during excavations conducted by Hurekka the Finnish Science Centre at the large stone-age dwelling site in Jokiniemi, Vantaa, S. mainland Finland. Two years later in 1992 another fragment (the lower part of a head), almost identical to the first one was found at the same site. In 2015 another head torso was reported, this one had been found already in 1989 but kept secret by the finder for 25 years. These three clay figurines represent the oldest realistic anthropomorphic stone-age human clay figures in Finland and are remarkable finds even in a northern European context.

The typological similarities of the Jokiniemi clay figures as compared to anthropomorphic clay figures found in the Baltic states and on the Åland islands suggest that contacts in the Baltic Sea region in the subneolithic (pre agrarian) period were limited not only to trade in amber but that also cultural and ritual influences were transmitted in the region.
I will review the current status of the genomics of the people of the Baltic Sea region ca 4000-2300 as it stands at the time of the Genomics of the people of the Baltic Sea region 4000-2300 BC

TH4-06 Abstract 11

The settlements of the Waldburg type and the origin of Primorskaya Culture

Author - Dr. Zaltman, Edwin, Archeology Institute of Russian Academy of sciences, Kaliningrad, Russian Federation (Presenting author)

Keywords: Corded Ware Culture, Primorskaya Culture, Settlement archeology

Presentation Preference - Poster

The relations, related to the genesis of Primorskaya Corded Ware Culture, still remain the most difficult and complicated. It is ultimately determined by the lack of research in some regions. The archeological research, started in the 70s of the XX century, allowed us to define a particular group of settlements on the coast of the Vistula Bay (Pribrezhnoye, Ushakovo 1-5) – the settlements of the Waldburg type. Their equipment greatly differs from the previously known Primorskaya Culture complexes. Unlike many other Primorskaya Culture settlements, the remains of the deepened up to 0.80 m into the subsoil and up to 35 m at length constructions are preserved in Pribrezhnoye. The main part of the eighteen C-14 datings, obtained from charcoal, bones, and hazelnut shell found in the lower and the upper levels of construction, corresponds with the interval 3100-2900 BC. These datings do not comply with the traditional concepts of Primorskaya Culture existence as it coincides with phase IIb of GAC. The ceramic complex accentuates the peculiarity of the monument even more. Different kinds of wide-mouthed pots and boat-shaped vessels had different biogeographic affinity (Skoglund et al. 2012), and that the Scandinavian Middle Neolithic farmers exhibited a degree of genetic differentiation observed between hunter-gatherers from the Funnel Beaker culture (TRB) and individuals from different Pitted Ware culture (PWC) contexts on Gotland (Ajvide and Ire). We can assume, that the original impulse came from GAC, though the main forms of wide-mouthed pots and boat-shaped vessels are most likely related to Cordet Culture. Peculiarities of the household constructions, ceramic complex, and material culture as a whole differ fundamentally from the antiquity of CWC. The cultural processes on the coast of the Vistula Bay apparently took their course differently than on the adjoining territories, at least on the initial stage. GAC and Sub-Neolithic cultures could play the main role in those processes.

Keywords: Genomics, PWC, TRB

Presentation Preference - Poster

Previous genomic research has shown individuals from the Middle Neolithic Gökhem passage grave in Västergötland associated with the Funnel Beaker culture (TRB) and individuals from different Pitted Ware culture (PWC) contexts on Gotland (Ajvide and Ire) had different biogeographic affinity (Skoglund et al. 2012), and that the Scandinavian Middle Neolithic farmers exhibited a degree of genetic differentiation observed between hunter-gatherers from the Funnel Beaker culture (TRB) and individuals from different Pitted Ware culture (PWC) contexts on Gotland (Ajvide and Ire), whereas the Scandinavian hunter-gatherers displayed no significant evidence of introgression from farmers (Skoglund et al. 2014). Here we present genomic data from individuals buried in the Ansarve Dolmen in Tofta Parish on Gotland, and investigate their relationship to contemporary individuals from Gotland and the mainland.

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TH4-07

PREHISTORIC FORAGERS IN THE NORTHERN FOREST ZONE: ISOTOPIC CLUES TO THEIR CHRONOLOGY, DIETS AND MOBILITY

Friday, 2 September 2016, 09:00-13:00
Faculty of Philology, Room K.Donelaitis
Author - Tõrv, Mari, Tartu, Estonia (Presenting author)
Co-author(s) - Meadows, John, Centre for Baltic and Scandinavian Archaeology (ZBSA), Schleswig, Germany

In the past, it has been shown that isotopic analysis of human remains from archaeological contexts can be a powerful tool for understanding past diets and mobility. However, the spatial and temporal requirements for a faunal baseline are not always well understood. In this paper, we will examine both the spatial and temporal requirements for a faunal baseline and introduce a discussion about the local isotope ecology of the Lake Lubāns valley.

TH4-07 Abstract 01
Looking for patterns in prehistoric diets – is there an objective approach?

Are we able to reconstruct individual diets on the basis of stable isotope data, typically in terms of consumption of two or more isotopically distinct food groups? Instead of simply looking for statistically significant patterns in human stable isotope values, therefore, we may attempt to test whether food consumption patterns varied over time, geographically, between sexes or age groups, according to mortuary ritual, within an individual’s lifetime, etc. Such attempts often meet with scepticism because they require the relevant food groups to be defined, and appropriate values applied to parameters that cannot be measured directly, such as fractionation between diet and human isotope values. The identification of human groups for comparison (e.g. defining appropriate regional or chronological samples) is also subjective. Rather than ignore these questions, we investigate how sensitive our interpretations are to factors such as the software and parameter values used, periodisation, sample size, and statistical testing criteria. We use new and previously published isotopic results from prehistoric burials at Lake Burtneja, Latvia, to show which of the informed choices we have to make have the greatest impact on the final narrative.

TH4-07 Abstract 02
Mesolithic diversity in the Baltic region

Author - Dr. Eriksson, Gunilla, Archaeological Research Laboratory, Stockholm University, Stockholm, Sweden (Presenting author)
Co-author(s) - Liedén, Kerstin, Archaeological Research Laboratory, Stockholm University, Stockholm, Sweden

Taking the two Mesolithic sites in Motala – Kanaljorden and Strandvägen – as a starting point, stable isotope data from a wide range of Mesolithic sites both east and west of the Baltic Sea will be discussed. The large variability in carbon, nitrogen, sulphur and strontium isotope values reflects not only the diversity in available resources, but also differences in mobility patterns and cultural choices, as well as chronological change.

TH4-07 Abstract 03
New Stable Isotope Analysis from Lake Lubans Stone Age sites, South-eastern Latvia

Author - Legzdina, Dardegļa, Institute of Latvian History, University of Latvia, Riga, Latvia (Presenting author)
Co-author(s) - Looe, Izzi B., Latvian Academy of Sciences, Riga, Latvia

The excavations, starting from mid-20th century up to nowadays have provided a rich and diverse animal bone material from settlements, as well as human burials. However, there have been no previous attempts to approach the material with stable isotope analysis method.

In this paper we present animal bone carbon and nitrogen stable isotope analysis results from different sites and introduce a discussion about the local isotope ecology of the Lake Lubāns valley.

TH4-07 Abstract 04
How close is close?

Faunal baselines in the Eastern Baltic region

Author - Tõrv, Mari, University of Tartu, Tartu, Estonia (Presenting author)
Keywords: faunal baseline, hunter-gatherers, Eastern Baltic, stable carbon and nitrogen isotopes

Stable isotope analysis of carbon (13C) and nitrogen (15N) of human bone collagen from archaeological contexts is an established method to address questions of past diets, and mobility patterns. In the context of the Estonian Stone Age, only human bone collagen has been systematically targeted for stable isotope analysis. However, to comprehend and analyse the isotope ratios of human bone collagen, any particular site in detail, it is important to know faunal isotope composition to provide a relevant paleotemporal baseline. It is not a novel statement, but the question of "how close is close enough" still remains.

In the paper we examine both the spatial and temporal requirements for a faunal baseline. The theoretical discussion will be complemented by examples from my own research on Estonian hunter-gatherers and published data from other hunter-gatherer sites in the Eastern Baltic.

TH4-07 Abstract 05
Diet and childhood residential mobility at Rinnukalns, Latvia, in the 4th millennium cal BC

Author - Meadows, John, Centre for Baltic and Scandinavian Archaeology, Germany, Germany (Presenting author)
Keywords: childhood mobility, stable carbon and nitrogen isotopes
The freshwater shell midden at Rīnņukalns, at the outlet of Lake Burtnieks in northern Latvia, is a regionally unique site type, which apparently reflects the intensive use of local freshwater resources in the middle-4th millennium cal BC. Dietary stable isotopes in bone collagen from the crania of 3 individuals buried in the midden, and also from all 4 individuals dated to this period at the nearby Zvejnieki cemetery, suggest that adult diets were dominated by freshwater species to an extent not seen previously, and that forest and especially coastal resources were relatively insignificant, by comparison with the preceding period. Incremental sampling of collagen can provide a record of diet at a much finer temporal resolution than bone, however, and we are therefore sampling the moirs of one Rīnņukalns individual to see whether it is possible to detect changes of diet and even of residence, at the quasi-annual scale permitted by this method. This approach may also allow the estimated date of death to be refined, as the radiocarbon age of collagen with a more terrestrial or marine isotopic signature will be less affected by dietary reservoir effects.

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The Neolithization of the north European lowlands:

**Archaeometric results on human remains**

**Author:** Dr. Plezonka, Henry, German Archaeological Institute, Berlin, Germany (Presenting author)

**Co-author(s):** Prof. Dr. Terberger, Thomas, Lower Saxony State Office for Cultural Heritage, Hannover, Germany

**Keywords:** 13C/15N isotopic analysis, Neolithization, North European lowlands

**Presentation Preference - Oral**

In northern Central Europe, the advance of the Neolithic way of life halted at the northern margin of the loess distribution for almost an entire millennium, before in the late 6th and 4th millennia cal BC, the farming economy started to spread into the northern lowlands. Deconstructing the Funnel Beaker Culture plays a key role for the question of an interminglement of the last hunter-gatherers and the southern farmers. There are indications that in the north, local forager communities continued to exist alongside the newly arrived farmers for centuries. Further east, the foraging way of life formed the basis of subsistence even longer. The last decade saw increasing progress in the analysis of human remains by archaeological methods. Here we present results of systematic stable isotope (13C/15N) studies on Stone Age human remains from northern Central and Eastern Europe. The individuals cover the time period from the Preboreal to the Subboreal (c. 9500 to 2000 calBC).

By determining information on the diet of the sampled individuals and linking it to chronological information, the data set sheds light on changes in subsistence economy against the background of cultural developments and absolute chronology. The results of the isotope analyses show a considerable consumption of fresh water resources during the Mesolithic and (early) Neolithic. It is interesting to notice that a major shift towards farming economy in northern Central Europe is visible not before the 3rd millennium calBC.

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Deconstructing the conception of pre-Neolithic farming in SE Baltic

**Author:** Dr. Piłucka-Kieniewicz, Giedri, Vilnius University, Vilnius, Lithuania (Presenting author)

**Co-author(s):** Kiselienė, Daiva, Nature research centre, Vilnius, Lithuania

**Keywords:** SE Baltic, Subneolithic, Subsistence

**Presentation Preference - Oral**

This paper is a critical evaluation of zooarchaeological, micropalaeontological and archaeometric data and their earlier interpretation in Lithuania, which served as the basis for constructing the concept of pre-Neolithic or Subneolithic low intensity agriculture and/or animal husbandry in the Eastern Baltic region. In addition, the paper presents the first direct AMS dates on remains of domestic plants and bones of domestic animals found in the Lithuanian Subneolithic and Neolithic settlements. According to the latest research, the substantial part of, or even the whole of the earlier “evidence” was wrongly forged because of the mistakes in the identification of plant and animal species and imprecise dating. The mistakes in dating were largely due to the ignorance of water reservoir effect when dating bulk samples of lacustrine sediments, unrecognized of the impacts of bioturbation and palimpsest on the formation of the archaeological strata, and low attention paid to stratigraphic and spatial documentation during very extensive excavations carried out in the second half of the 20th century. So far, there is no reliable evidence that domestic plants and animals were adopted in Lithuania prior to the appearance of the Globular Amphora and Corded Ware cultures in 3200/2700 cal BC. However, that does not mean new evidence cannot be obtained in the future, if direct AMS dating of plant and animal remains from Subneolithic contexts is to be continued, and if systematic macrobotanical analyses would eventually be made on samples from settlements in higher elevations, and not only from lakeshore settlements and fishing sites.

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Zemdar Culture in the Light of 14C dates - Relating to Sub- and Neolithic Cultures in the SE Baltic

**Author:** Kozicki, Magdalena, Nicolaus Copernicus University in Toruń, Toruń, Poland (Presenting author)

**Keywords:** Bayesian modelling, subneolithic, Zemdar culture

**Presentation Preference - Oral**

Zemdar Culture (late: ZC) is phenomenon which absorbs researchers from one hundred years. In spite of it still it is known not more than a few peat bog sites of mentioned archaeological unit in three areas separated with not very great distances in the Northeastern Poland and in the Kaliningrad Oblast. As of today it seems like the range of the ZC is impossible to determine credible. What is most riveting is to figure out its origins especially due to establish proveniences of pottery making. This is because it seems the ZC was one of those archaeological cultures which mixed ceramic traditions (probably not only them) from both – agricultural and hunter-gatherer-fishers worlds.

To this day there is ca 60 radiocarbon dates estimated and published for sites of the ZC. What is more important main groups of it where taken as a series from stratigraphical record from two epizonic sites. This allows to use Bayesian modelling in creating absolute chronology of the ZC. It is worthwhile to mention that there are sets of 14C measurements taken from pottery sherd, which were carried out in different traditions, and they also may be combined in some statistical calculations.

Bayesian statistic have been used in analyzing and interpreting radiocarbon data for a quite long time and is quickly developing part of archaeological research. Yet there is many obstacles in correct applying and understanding its results, mainly due to radiocarbon dating disadvantages. In case of the ZC peat bog site’s stratigraphy is also an difficulty.

Although after analyzing all of accessible data it is possible to establish a chronology of ZC. Moreover it enable to correlate it with other subneolithic cultures from the Southeast Baltic region (like Narva, Neman, Pitt-Comb Ware cultures). There are available radiocarbon measurements for all of them however in diversified amount especially depending on a region and ceramic style.

It seems the ZC was one of those archaeological cultures wich mixed ceramic traditions (probably not only them) from both – agricultural and hunter-gatherer-fishers worlds.

Presentation Preference - Poster

The territory of the south-eastern Baltic region might be described as lying on the margins of the classical Paealoctic world. No Middle and Upper Paealoctic sites have been found so far in this part of Europe, and on the basis of available data the interpretation of this area has been related to the Bugien warming or Greenland interstadial sub-stage GI-1a, which began in northern Europe at about 14.7 cal ka BP. The recent discovery of traces of human occupation at the Ryadin-5 archaeological site (north-eastern part of the Kaliningrad region RF) has made possible a significant revision of our understanding of the early colonization of this territory. The luminescence (IR-OFL) age of the deposits implies that human occupation of the south-eastern Baltic region occurred at least between 50 ka and 44 ka ago, during the first half of MIS 3.

The dates obtained for the culture-bearing horizon place the Ryadino site among the most ancient sites of the transitional period from Middle to Upper Paealoctic in Europe such as Kostienki 12 (53–52 ka), Khvalynsk 1 (55–48 ka), Willendorf I (43.5 ka), Galaskotestie 43–42 ka), Kent’s Cavern (44–41 ka), etc. At the same time, the Ryadino site is the most northern (55º 01' N) of all those mentioned above. Further north the only sites with slightly younger artifacts are found along the western flank of the northern Ural Mountains: Mamontovaya Kurya (43–40 ka BP) and Zoarokhi (39–37 ka BP).

The lithic assemblage of the Ryadino site comprises more than 2000 flints and includes various kinds of tools, but whereas the chronology of the site has been established with confidence, the cultural attribution of the flint assemblage has yet to be identified. In the concerned time period, three groups of assemblages have been assigned to the earliest modern peopling of
Central Russia (c.6500–4000 cal BC) evidence that fishing was a central element of the Mesolithic subsistence economy, both at Zamostje, and at other sites isotopes, which suggest only limited consumption of aquatic resources, despite the abundant artefactual and archaeozoological... one of the dated fragments been dated by radiocarbon to the Late Mesolithic (aceramic) period (c. 6500–5900 cal BC), although one of the dated fragments... representing at least 5 and perhaps as many as 18 individuals, ranging in age from 6 or 7 to mature adult. Two cranial fragments have... Only 18 fragmentary human remains have been identified at Zamostje 2 (c.6500–4000 cal BC), despite extraordinarily good conditions... of these fortifications lasted for more than 100 years and are generally described in three stages. This paper will give an... coast. Founded 1621 in the estuary of the river Göta, it became the main link to the North Sea trade and onward. Maybe the economically most important and strategically best placed of these were the city of Gothenburg on the Swedish west... centennial project that resulted in the fortified city of Gothenburg. The design was very modern with the continental idea of an ideal plan protected by massive fortifications. The construction... 1611-1632) more than 15 new towns were founded. In the expanding state of Sweden during the reign of Gustaf II Adolf (1611-1632), the state was reformed regarding centralization of power, more elaborate bureaucracy and higher taxes. This was the foundation for an expanding empire and the beginning of a... Greatness” (Stormaktstiden). In the wake of a major defeat in the Kalmar War, the state was reformed regarding centralization of power, more elaborate bureaucracy and higher taxes. This was the foundation for an expanding empire and the beginning of a centennial project that resulted in the fortified city of Gothenburg. In the expanding state of Sweden during the reign of Gustaf II Adolf (1611-1632) more than 15 new towns were founded. The new fortresses and protected towns were formed by the combination of military presence and civil life. But even the major cities were characterized by military aspects. Still the visions of the authorites met with harsh economic realities. Did the fortifications built match what was intended? However, what is needed today is a holistic approach to the “ideal cities” created by military states like Sweden and her neighbors. The last decades have witnessed a re-establishment of contacts within the region. Today it is desirable to address themes from a common past. Once again the Baltic Sea unites the countries bordering its shores. Research focused on the Early Modern Period with its multifaceted development can give us an important background; thus providing new perspectives on our own time. This season welcomes papers dealing with research in fortresses and fortified towns of the Baltic and Scandinavian regions. We hope for a wide approach, with themes ranging from the development of modern fortifications and siege archaeology to the study of life and death in these fortified cities. The social and material aspects of human existence are seen as central for the understanding of contexts like these. This makes the season well suited for contributions with an interdisciplinary approach.
Keywords: Construction, Fortification, Kalmar
Presentation Preference - Oral

The town Kalmar is situated in the southeast of Sweden and was together with Gotenburg and Jönköping the most important
outposts in the early Great Power period. As decisions were made in 1640 to move the town Kalmar to a new and strategically
more beneficial location, the town would also be surrounded with a modern fortification. Several archaeological excavations have
been made in the last years on one of the nine bastions, Carolus Norus (Charles IX). In addition contemporary maps have been
studied describing the work in progress. This has concluded that the work on this bastion alone progressed over twelve years
and it took more than 50 years to finish the whole fortification. This puts questions on an efficient defense for the town, its population
and administration. The studies revealed solutions to problems regarding the construction, and also the development over the
years to keep up with modern types of the construction of bastions.

TH4-08 Abstract 03

The Strong Link in the Chain? Jönköping Castle - a Swedish border fortress with hidden defects

Author - Peterson, Claes B., Jönköping County Museum, Jönköping, Sweden (Presenting author)
Keywords: Conflict, Fortification, Siege archaeology
Presentation Preference - Oral

In the beginning of the 17th century the vulnerable southern border of Sweden was defended by modern fortresses. While Kalmar
and Elfsborg protected the coastline, Jönköping castle should secure the inland routes towards the central parts of the realm. The
site was strategically well suited, being a major crossroad with access to waterways.

The castle was originally a Franciscan convent, taken over by the Crown after the Reformation and fortified with walls, dry
moats and corner towers. Vastly enlarged and modernized in the first half of the 17th century, this artillary fortress and its outworks
covered an area of 10 hectares. From contemporary plans and drawings it is obvious that these defenses were built according to
the latest principles in the art of fortification.

However, recent excavations and extensive GPR-mapping of the ruins have given reasons to doubt the battle-worthiness of
this major border fortress. While written sources speak of cracks in the masonry and crumbling walls, archaeological observations
of insufficient foundations and poor craftsmanship points in the same direction. It is questionable if the castle could have resisted
a serious siege. Within lies the paradox of Sweden as a military state - its great ambitions in conflict with limited resources.

TH4-08 Abstract 04

The bastions of Christian 4th

Author - MA Simonsen, Rikke, Copenhagen Museum, Copenhagen, Denmark (Presenting author)
Keywords: Baltic region, Fortifications
Presentation Preference - Oral

Christian 4th is considered one of the most influential Danish kings. From 1598-1648 he ruled the kingdom Denmark-Norway,
which included the southern part of Sweden and the islands of Gotland and Saaremaa. This gave Christian 4th control of the
waterways to the Baltic Sea and a huge profit on the Sound toll – an important factor in the king for fighting for the Baltic Sea
dominion and engaging the country in several wars.

Christian 4th made great effort to modernize the fortifications of the realm introducing the bastioned fortification on a big
scale. He built more than 30 fortresses and fortified towns within today’s Denmark, Norway, Sweden, Germany and Estonia.

This paper wants to look into what concerns influenced the king’s strategy of building fortifications which had a strong focus
on the Baltic region. Was the king demonstrating a general plan for the safety of the realm or was he reacting to sudden and
changing threats? Many plans were made for building new fortifications and renovating old ones. Why were the plans carried
out in some places but changes given up in others? Were finances, incompetence, enemy threats or international politics
responsible for the fate of the fortifications?

TH4-08 Abstract 05

The Early Modern Fortifications of Halmstad

Author - Lena, Bjuggner, Regional Museum Halland, Halmstad, Sweden (Presenting author)
Keywords: early modern, fortifications
Presentation Preference - Oral

Halmstad, situated in the former eastern part of the Danish kingdom, was from the beginning of the early 14th century a simply
fortified town built on royal ground. It had a strategic position by the mouth of the river Nissan and the important road that led
to the Swedish town Jönköping. Halmstad was also situated in a province that was bounded by Sweden. Several times during the
15th and the beginning of 16th centuries the town was forced to open the gates for the Swedish army. Halmstad was reinforced
in the middle of 16th century and a new fortification was erected between 1588-1605 under the leadership of the Dutch master
builder-architect Hans van Steenwinkel and after his death in 1601 succeeded by Willem Cornelisse. The layout of the new
fortification system made it possible for the Danish king Christian IV to rebuild the town with a renaissance plan after a devastating
fire in 1619. The defensive works was reinforced during the following decades. Through the Peace Treaty in Brömsebro 1645
Halmstad and the province of Halland became Swedish. The fortifications were maintained during the end of 17th century but
started slowly to dilapidate and was demolished in 1735 by the military.

The first part of the paper will be a short presentation of the early modern fortifications put in the contemporary political
situation and exposed position in the two kingdoms (Denmark and Sweden). The second part will be an introduction to the
archaeological examples from the Danish period. The investigations during the last years have proved that the defensive works had
an immediate impact on the military townplan in certain areas. Old structures have also been integrated and given new functions. Even
if the inhabitants have been better protected the fortifications created practical problems and forced people to change their habits.

TH4-08 Abstract 06

From earthworks to scars of the cold war - 500 years of coastal defence on Gotland

Author - PhD Swedjemo, Gustaf, Uppsala University, Uppsala, Sweden (Presenting author)
Keywords: artillery, coastal defens, Gotland
Presentation Preference - Oral

Gotland, situated in the middle of the Baltic Sea, is with its relatively few inhabitants and long coastline of around 560 km, hard to defend
from invaders. There are a few good natural harbours, of which the most seem to have been defended by fortifications in some form
from historical times until the 21th century, with some breaks. The remains of most of them are still visible in the landscape.

This presentation is about a new research project, just started about coastal fortifications on Gotland from early modern
times up until the turn of the new millennium, when all coastal fortifications and fixed coast artillery batteries where closed down,
not only on Gotland, but in all of Sweden. This covers a period of nearly 500 years, but this presentation will mostly deal with the
early modern times.

The project was initialized by an observation of some symbols and notes in a historical map from 1694 which is to my
knowledge not discussed before. In the map are three conventionalize symbols of sconces with a note, saying "old decayed
scones of wood" in an area with no known fortifications until the late 19th century. One question is when and who built them,
since they are from a period of several wars, when Gotland was swinging to and fro between Denmark and Sweden. There are no
visible traces at the sites today.

In the military archives there are some interesting fortification maps, over all or parts of Gotland, and several detailed blue
prints of fortifications, from the 18th century. One map and some blue prints are made by the land surveyor and lieutenant of
the fortification and Matias Schilder in 1712-14 during the Great Nordic War, when the threat of a Russian invasion became imminent.

The map shows the position of some 20 "beach batteries" and some additional inland ramparts. It is clear that most of the beach
batteries were built, and most of them are identified, but not all. In an initial analyses based on high resolution LiDAR-data, is one of
the missing ones found at a different location than previously supposed. An interesting aspect, which the project hopes to shed
some light on, is on what criteria the 20 sites were chosen, since many known landings sites have no batteries.

Some of the sites for these beach batteries are known to have earlier, Danish batteries, of unknown date. There is a written
source from 1601, ordering the Danish governor of Gotland to put all sconces fallen in decay by the countryside harbours in order,
but when the first fortifications was erected is unknown, which we hope be able to answer.

TH4-08 Abstract 07

Kuressaare fortress (Estonia) as an example of the transformation of bastion fortifications

Author - Nurk, Ragnar, Tallinn University, Aruküla, Estonia (Presenting author)
Keywords: 17th century, Baltic Sea hegemony, bastion fortifications
Presentation Preference - Oral

Recent archaeological investigations have revealed, that the development of the bastion fortifications of Kuressaare fortress
was more complicated than has been presumed.

Kuressaare, located on the Saaremaa island in the Baltic Sea, is one of the few medieval fortresses in historical Livonia
where the modernization of the fortifications continued also after the Livonian War (1558-83). It was a foothold, in succession, of
Denmark, Sweden and Russia.
Prussian, early modern fortification in Pomerania, a result of the Prussian - Swedish struggle

Author - PhD Podruczyk, Grzegorz, Adam Mickiewicz University, Slubice, Poland (Presenting author)

Keywords: Fortification, Pomerania, Prussia

Presentation Preference - Oral

The Duchy of Pomerania, after the death of the last duke from the House of Griffins in 1637, was the scene of a struggle between Prussia and Sweden. Initially the duchy was divided into two parts – Prussian Farther Pomerania, and Swedish Hither Pomerania. But as a result of the Swedish defeat in the Great Northern War in 1720, Prussia also won a large part of Hither Pomerania, with the capital city and main fortresses, Stettin and the entire estuary of the Oder river. But all of Pomerania was again a witness to Prussian-Swedish hostility during the Seven Years’ War. Its last act was the annexation of Swedish Hither Pomerania with Stralsund in 1815.

One of the key factors for this struggle were the fortifications. They were built during the wars (field fortifications) and during peacetime as well (fortresses, autonomous forts or sconces and fortified cities). Siege warfare assumed an important role in the wars.

The main stress in this paper will be on the presentation of the activity of the Prussian side of the conflict, mainly in the area of construction of new permanent fortifications from the last half of 17th century through the first half of the 18th century. This large period is divided into two smaller ones.

During the first, between 1648 and 1720, Prussian activity was focused on securing the Farther Pomerania. Its main city and most important fortress was Kolberg. The bastion fortifications of this city were already built by Swedish forces during the last stage of the Thirty Years’ War, but the Prussians thoroughly rebuilt it during the long modernization between 1655 and 1716. Apart from Kolberg a fortress in Rügenwalde was the planned, but never built. The main achievement of this period was the modernization of the fortress at Stettin. It lasted only fifteen years (from 1725 to 1740), but was very intensive, more than half of the Prussian engineering corps was involved in this large construction site. Just as in the previous period, also after 1720, another fortress was considered (in Stargard), but it also was never built. After 1720 the Prussian engineers had to handle the problem of a large number of smaller and weaker fortified complexes in the Hither Pomerania, “inherited” from Sweden, such as cities with bastion fortifications (Wolin, Damm, Cammin in Pommern, Neu Warp, Demmin, Dammgarten and Anklam), or single strongpoints such as sconces in Penemünde, Anklamer Fehr, Beinemeinde and Dieneva. Only some of them were modernized (Penemünde and Anklamer Fehr Schanze) but all of them were preserved until the second half of the 18th century, and even took an active part in the Seven Years’ War.

In the projects of Prussian fortifications in Pomerania different solutions are visible; traditional (passetses for guns in the flanks of bastions in Rügenwalde); modern, French inspired, connected with the activity of Huguenot engineers such as Cayart or Montargues, and the solutions influenced by Scandinavian military architecture (powder magazines in Stettin, similar to those in Copenhagen).

TH4-08 Abstract 11
Sveaborg (Suomenlinna), an 18th century sea fortress and the importance of water areas

Author - MA, PhD Student Koivikko, Minna, The National Board of Antiquities of Finland, Helsinki, Finland (Presenting author)

Keywords: Baltic Sea, fortification, maritime

Presentation Preference - Oral

In 2014, the Vasa Museum carried out an extensive field trial of a replica 24-pounder bronze demi-cannon, based on those found on the warship Vasa. The gun was developed in 1620 as a mobile heavy field piece, adapted to naval use in 1626 for Vasa and her sister ships. This gun later equipped both the largest warships and field artillery units during the Thirty Years War, ending it service career as a fortress gun in Sweden’s Baltic outposts. Two-week program of fire revealed not only the ballistic characteristics of this type of artillery, but trials against a replica section of ship structure demonstrated that conventional interpretations of the effect of cannon fire on warships is oversimplified. This paper presents the results of the tests in the context of how such guns might have been used against both ships and shore installations.

TH4-08 Abstract 12
Remnants of a Siege – The Siege of Älvsborg 1612 at the West Coast of Sweden

Author - Wennberg, Tom, Gothenburg City Museum, Gothenburg, Sweden (Presenting author)

Co-author(s) - Sandin, Mats, Rio Göteborg Natur- och kulturkooperativ, Gothenburg, Sweden

Keywords: 17th century, Castle, Siege archaeology

Presentation Preference - Oral

The primary characteristics of siege archaeology are that the remains in question are often from a relatively short period of time and that the events are not frequently documented, and in that case particularly by the victors. In recent years battlefield archaeology has had, at least in Sweden, a major boom, but the archaeology of sieges and siegeworks has been in the shadows. In this paper, we present the siege of the royal castle of Älvsborg 1612 during the Kalmar War, and the archaeology of certain events during this siege.

The royal castle of Älvsborg was of great importance for royal power. It secured the corridor of land that provided the crucial westward passage for Sweden. The castle and its fortifications are strategically located on a cliff at the mouth of the river Göta. The castle is an important and widely known part of Swedish history and is best known for two exceptionally large tributes paid...
The city wall in Nya Lödöse

Author - Archaeologist Svensson, Pia, National Historical Museums, Malmö, Sweden (Presenting author)
Co-author(s) - Bakunic, Imelda, Rio Göteborg Natur och Kulturkooperativ, Göteborg, Sweden

In 2013 the largest urban archaeological excavation ever undertaken on the west coast of Sweden started in the Old Town (Gamlastaden), Gothenburg. The town of Nya Lödöse/Nya Lödöse, at the mouth of Göta river, which lay here between 1473 and 1614, is still being excavated. Twice before, in the 1910s and 1960s, archaeological excavations were carried out, mainly in the northern parts of the town. During the first excavation, parts of the northern moat were also recorded. Since then, more recently, further smaller investigations have been carried out. In 2015 we had the opportunity to explore much larger areas southwest of the town. Underneath the modern disturbance and an 1800s construction debris and foundation, we had the opportunity to record remains of the city wall. This area consisted of the following structures: a punitive gatehouse, a palisade, parts of the ramparts and the appurtenant moat, as well as a bridge foundation in the moat. Having excavated the remains and the parts of the city wall (as well as the remains of the town), we now have a significant body of material reflecting daily life in the town of Nya Lödöse. Organic materials, construction waste and the practical use of the moat in the handling of various materials, for example flax-retting, are all evidenced. Subsequently, we address the question of how the construction of the ramparts affected the people in Nya Lödöse and what was its real purpose? We present the preliminary results and take a closer look into how the construction of this town limit affected the town and its population.

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in connection with the Nordic Seven Years War (1568-1570) and the Kalmar War (1611-1613). These wars were two major conflicts between Denmark and Sweden; a result of both countries constant rivalry for dominion in the northern part of the Baltic region.

Between 2003 and 2006, Gothenburg City Museum conducted a series of excavations at the Älvsborg Castle. The excavations aimed at examining structures belonging to the castle’s early modern fortifications. Some features were revealed, such as a tower, the moat, and the covered way. In addition to these, an extensive assemblage of artifacts that can be directly linked to the Danish siege of Älvsborg 1612 was recovered. The artifacts consisted of a range of ordnance, including lead bullets, cannonballs, parts of rifles, fragments of grenades. In connection with the besieging aspect of siege archaeology, the excavations also uncovered remains of a besiegers approach (bas), and mines, and one of the castle’s defenders’ countermines.

During this project it has been possible to link some of the archaeological remains to actual events described in the historical sources therefore strengthening the actual narrative.

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TH4-08 Abstract 13

The Outdating of Medieval Fortifications – The Castle of Raseborg and the Town Wall of Vyborg

Author - PhD docent Haggen, Georg, University of Helsinki, Espoo, Finland (Presenting author)

Keywords: Castle, Town wall, Fortifications, Medieval

Presentation Preference - Oral

The castle of Raseborg (Finland) and the town of Vyborg (Russia) both locate on the northern coast of the Gulf of Finland. Raseborg was built in the 1370s by the Swedes and during the next 150 years the castle was gradually enlarged. The town of Vyborg situated close to the eastern border of the Swedish realm and it was continuously threatened by the Russians. There was an older castle close to the town of Vyborg but in the 1470s the town itself was fortified too. From now on high walls surrounded the medieval town.

When Raseborg was founded fire armes were not yet in use along the northern Baltic Sea. A century later when Vyborg was surrounded by the walls fire armes were known but on those days most of them were light weapons making no harm to stone structures.

In dawn of the early modern era or the early 16th century, the role of the fire armes had changed. New guns were heavier and more effective than the earlier ones. Simultaneously the range of the fire armes had become much longer. Old medieval fortifications offered not anymore a safe heaven. The new era meant remarkable changes for the old fortifications. The castle of Raseborg had lost its military importance already in the 1520s. In 1550 King Gustaf Vasa made a decision to abandon the old castle and build a modern one called Helsingborg in his new town called Helsinki. This was a part of his large castle building program but in the case of Helsingborg the King was not able to realize his ambitious plans.

In Vyborg a fortified suburb with two modern bastions was built ahead of the weakest part of the old town wall in the middle of the 16th century. These arrangements combined with the old town walls secured the urban settlement for another hundred years. However, in 1700 when a new war between Sweden and Russia broke out, the old town wall was in bad condition. Three years later an officer called Lorentz Stobaues was ordered to modernize the fortifications. The outdated town walls were now pulled down. Fortunately, before he began replacing the fortifications Stobaues documented the old structures offering later generations a possibility to get an overview of the Europe’s northernmost medieval town wall.

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TH4-08 Abstract 14

The fortifications of Copenhagen: The western boundary as seen at Rådhuspladsen (Townhall square)

Author - Lyne, Ed. Museum of Copenhagen, Brønshøj, Denmark (Presenting author)

Keywords: Bastion, City Gate, Fortifications

Presentation Preference - Oral

Prior to excavations carried out at Rådhuspladsen in 2011/2012, relatively little was known with certainty about Copenhagen’s former western boundary. What knowledge was available mainly stemmed from cartographic sources and historical references, as well as present day street layout (particularly Vester Voldgade). The first map however was only drawn in 1599, and the first historical reference for this area date to the later 1530s, when Vesterport (the western gate) is mentioned for the first time. Part of the aim of this excavation was to confirm or reject existing ideas about the city’s border to the west; where it was placed, how it was constructed and when, and how it changed through time.

The excavations at Rådhuspladsen carried out in advance of the Metro Cityring, offered an unprecedented opportunity to examine the remains of the fortifications along Copenhagen’s western boundary, and as will be discussed here, the evidence unearthed has been extensive and very illuminating regarding the ongoing changes made to this boundary through the centuries. The historical evidence, previous archaeological observations and the new evidence as documented in 2011/2012 will all be outlined, in an attempt to achieve as complete an account of the story of this boundary as possible.
TH4-09

PAST ANIMAL AND HUMAN RELATIONSHIPS AROUND THE BALTIC

Friday, 2 September 2016, 09:00-16:00
Faculty of Philology, Room 107

Author - Kirkkinen, Tuula, University of Helsinki, Helsinki, Finland (Presenting author)
Co-author(s) - Daugnora, Linas, Klaipeda University, Klaipeda, Lithuania
Co-author(s) - Bartosiewicz, Łukasz, Stockholm University, Stockholm, Sweden

Presentation Preference - Regular session

Archaeology of the Baltic region

438 439

This paper addresses the question of wild mammals and its significance to life of societies living in Poland during the Middle Ages. Several publications about particular species have been published so far mostly in journal Archaeologia in 70's and 80's. There are also two archeozoological synthetic works about past Polish fauna by Piotr Wysocki (1985, 1994). However in present research authors revisit old records and opinions on this topic. Special attention will be also paid to fusion of archeozoological, historical and ethnoarchaeological knowledge. It will be possible thanks to considering the time, space and category of archaeological contexts. Therefore the picture of medieval hunting, which is strictly related to the social status, will be possible to obtain. In this context it is important to emphasize special species such as red deer, elk, wild boar or brown bear. Crucial role played also aquatic mammals like beaver and otter, and its use as a fur bearing animals. Apart from considerations on cultural aspects some osteometric observations will be performed. Measurements will be used for detecting the diachronic and synchronous trends in body size changes.

TH4-09 Abstract 03

The role of big game hunting among Iron Age boreal zone farmers

Author - PhD Student Kirkkinen, Tuula, University of Helsinki, Helsinki, Finland (Presenting author)

Keywords: animal hair identification, inhumation burials, wild animals

This paper aims to discuss the role of big game hunting among the Iron Age farming populations in the southern half of Finland and West Karelia (Russia), South-East Fennoscandia. In Finland the importance of hunting and fur trade as supplementary economies have been considered an outgrowth of area's location at the northermmost limits of the cultivation zone in Europe. In recent studies hunting is hypothsized to have continued as the main subsistence strategy especially in Finnish inland areas long after the early phases of agriculture. In the northern and eastern parts of Finland hunting retained its central role up to the Modern Age. In this paper, the continuity of hunting and the long-lasting legacies of accompanied traditions are studied on the basis of Ringerland ferrous ferrous and Alces alces skin and hair remains found in archeological assemblages up to the 17th century. Although the results are based on a somewhat heterogeneous and fragmented body of source material, they underline the importance of hunting and wild animals in the Late Iron Age and Early Medieval world.

TH4-09 Abstract 04

In search of an animal skin: applying SEM for the soil of the Perttulanmäki Corded Ware grave, Finland

Author - PhD Vajanto, Krista, Nanomicroscopy Center Aalto University, Espoo, Finland (Presenting author)
Co-author(s) - MA Aholia, Marja, University of Helsinki, Helsinki, Finland
Co-author(s) - MA Kirkkinen, Tuula, University of Helsinki, Helsinki, Finland

Keywords: animal hairs, Corded Ware grave, SEM

Presentation Preference - Oral

In the acidic soils of Finland, where organic materials from Stone Age are only rarely preserved, the Perttulanmäki Corded Ware grave is an important exception. Indeed, the Perttulanmäki grave, excavated at the 1930's, is the only Corded Ware grave in Finland with preserved human bone material. Also, the remains were fragmented and buried in a grave context. Therefore it will be possible thanks to considering the time, space and category of archaeological contexts. Therefore the picture of medieval hunting, which is strictly related to the social status, will be possible to obtain. In this context it is important to emphasize special species such as red deer, elk, wild boar or brown bear. Crucial role played also aquatic mammals like beaver and otter, and its use as a fur bearing animals. Apart from considerations on cultural aspects some osteometric observations will be performed. Measurements will be used for detecting the diachronic and synchronous trends in body size changes.
TH4-09 Abstract 05

A critical appraisal of using relative bone weights of reindeer from archaeological sites

Author - Prof. Bartosiewicz, Łasztó, Osteoarchaeological Research Laboratory, Stockholm University, Stockholm, Sweden (Presenting author)

Keywords: meat consumption, reindeer, relative bone weight

Presentation Preference - Oral

Quantification in archaeology requires a combination of various approaches. In addition to primary osteological data (Number of Identifiable Specimens and weight) derived measures have been calculated to compensate for bias caused by fragmentation and selective preservation. Fragment weights have remained underexploited in developing such methods. The argument against their uncritical use is the changing specific weight of bone during diagenesis which precludes estimating absolute quantities of meat and even comparisons between bone deposits of different preservation.

Reichstein (1994) used the relative weights of elements in complete skeletons for cattle, sheep and pig as standards in analyzing the summarized fragment weights of elements in archaeological assemblages, presuming that the criterion of homogeneous preservation is met. Aside from NISP, weight often is the only information available in fragmented materials for estimating the representation of various body parts in food refuse. In this paper Reichstein's method is extended to reindeer, a meat source of key importance in Paleolithic Europe and throughout the history of the northern Baltic region and adjacent areas. Skeletal element weights of a mature male were chosen against whose proportional portions weight distributions in archaeological assemblages can be compared. Bone measurements taken on the same standard individual can provide a basis for log size index (LSI) calculations, by which the few surviving bone measurements in the archaeological material can be compared to those of the reference specimen.

Given the methodological concerns involved ranging from taphonomic issues to intraspecific variability a SWOT analysis of the relative weight method was carried out to appraise its applicability to reindeer.

TH4-09 Abstract 06

Swine and ritual at the turn of fourth millennium BC on the Polish Plain

Author - MA Lisowski, Mikolaj, University of Sheffield, Sheffield, United Kingdom (Presenting author)

Co-author(s) - Prof. Szmyt, Marzana, Adam Mickiewicz University in Poznań & Poznań Archaeological Museum, Poznań, Poland

Keywords: Neolithic, Poland, Zooarchaeology

Presentation Preference - Oral

The paper explores the role of pig in ritual of communities associated with Globular Amphora Culture (GAC) at the turn of 4th millennium BC on the Polish Plain. Distinct ceremonial practices involving domestic animals are well-documented at sites linked to this culture, including commonly documented practice of so-called cattle burials. Pigs play also an important role for GAC context, and are also present in burial practice; however, the role of this species in other ritual activities, including funerary is largely under-explored. Taking into account new evidence from Globular Amphora Culture at Widziszewo in Greater Poland region we aim to explore this issue. The deposit excavated in one of pits at this site consisted of a tight cluster of remains of six pig carcasses, disarticulated and consumed in distinctive and standardised manner during a short- time event. The evidence from Widziszewo represents hitherto undocumented aspect of ritual activity of GAC communities, and has no direct analogies in the Polish Plain. Based on the data, it is possible to trace the significance of pig as a animal consumed and/or deposited in ritual contexts of GAC. Particular emphasis is put on differential treatment of pig body parts: depositing heads in human burials (e.g. in Chodzież), and communal consumption of carcasses (as documented in Widziszewo). This issue will be a subject for further research to determine whether it was a widely applicable rule or a single instance.

TH4-09 Abstract 07

Cluttered faunal remains from a Roman Iron Age burial mound in Sweden: a taphonomic perspective

Author - Stella, Bettina, Stockholm University, Uppsala, Sweden (Presenting author)

Presentation Preference - Oral

The area of Fullerö, north of Uppsala has been subject to numerous archaeological excavations. Artefacts and structures demonstrate a long continuity from Neolithic times and onwards. Finds datable to the Roman Iron Age (1st to 4th century AD) dominate the context. Investigations in 1934 concerned a burial mound in the southern part of the area (RAA 163:1). It contained a Roman Iron Age chamber tomb. Excavations yielded various precious finds, as well as human and animal remains. Artefacts and bones (mainly unburned) were unevenly spread out in the fill of the mound. Looting has been suggested as the main reason. The human remains represent a single individual, an adult male. The animal bones derive from both domestic and wild species.

The burial mound at Fullerö is quite exceptional and unusually rich for its period. While the artefacts and human remains have been closely studied and interpreted, the faunal remains were only mentioned tangentially. Animals were common burial gifts in Swedish prehistory, deposited as corpse individuals or food offerings. Unfortunately, looting as well as contemporaneous and later activities on the site have hampered a straightforward interpretation. An advanced approach, contextual taphonomy, was thus used to analyse the faunal content of the chamber tomb and to distinguish effects of later activities.

The identification and quantification of the remains will be accompanied by a comprehensive analysis of e.g. fragment size, weathering and fracturing. The matter is challenging and complex, but it is hoped that contextual taphonomy might offer a means to approach faunal remains in disturbed archaeological settings. This study will thus contribute to the discussion about the ritualization of animals during the Roman Iron Age and demonstrate the possibilities and limitations of archaeozoology today.

TH4-09 Abstract 08

Animals of the living and the dead. Animal bones of Iron Age burials and settlement at Old Uppsala

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Keywords: animal bones, cremations, social zooarchaeology

Presentation Preference - Oral

Around the Baltic Iron Age burial mounds animals reflect the importance of animals to humans in the Pre-Christian societies. Burials and ritual depositions of animal bones reveal complex social and symbolic relationships between humans and animals beyond the use of animals as a food source. It is evident from several studies that animals had different social and symbolic significance for the living and for the dead in the burial rites. Excavations in Old Uppsala, Sweden of a Late Iron Age settlement with a large contemporary cemetery have resulted in unusual conditions to study the animal and human relationship. A comparative study of faunal remains from settlement and burial has been performed to examine the handling of different animals in the everyday life of the living at the settlement and burial rituals of the dead. The study is based on abundance of species, but also age and sex of the animals. The taphonomic effect of cremations on bones from the burial in relation to the unburned bones from the settlement has been important to consider.

A critical appraisal of using relative bone weights of identifiable specimens and weight) derived measures have been calculated to compensate for bias caused by fragmentation and selective preservation. Fragment weights have remained underexploited in developing such methods. The argument against their uncritical use is the changing specific weight of bone during diagenesis which precludes estimating absolute quantities of meat and even comparisons between bone deposits of different preservation. Taking into account new evidence from Globular Amphora Culture at Widziszewo in Greater Poland region we aim to explore this issue. The deposit excavated in one of pits at this site consisted of a tight cluster of remains of six pig carcasses, disarticulated and consumed in distinctive and standardised manner during a short-time event. The evidence from Widziszewo represents hitherto undocumented aspect of ritual activity of GAC communities, and has no direct analogies in the Polish Plain. Based on the data, it is possible to trace the significance of pig as a animal consumed and/or deposited in ritual contexts of GAC. Particular emphasis is put on differential treatment of pig body parts: depositing heads in human burials (e.g. in Chodzież), and communal consumption of carcasses (as documented in Widziszewo). This issue will be a subject for further research to determine whether it was a widely applicable rule or a single instance.

TH4-09 Abstract 09

Sami animal offerings, changing religious practices and human-animal relationships

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Keywords: animal offerings, reindeer domestication, Sami archaeology

Presentation Preference - Oral

In recent years, archaeological excavations have been conducted on Sami offering sites dating ca. 11th to the 17th centuries in Finnish Lapland. Moreover, some materials from Northern Sweden and archived in museum collections have been revisited with new methods and questions. Zooarchaeological analysis, radiocarbon datings of animal bones and stable isotope analyses reveal new information about religious ritual, religious change, and human-animal relationships among the Sami. We argue that there was a change in the offering tradition, interweaving with changes in the subsistence economy and especially reindeer domestication. Our results indicate that reindeer domestication, acknowledged to have had a major impact on social organization and economy, was also a major factor in the transformation of Sami indigenous religion. However, the underlying nature of the offering tradition remained consistent although the focal species of economic and religious interest changed.
Reindeers in Lithuania: a technological study of antlers artefacts

Author - Dauabra, Linas, Vilnius University, Vilnius, Lithuania (Presenting author)
Author - Girininkas, Algirdas, Vilnius University, Vilnius, Lithuania
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Co-author(s) - Dauabra, Linas, Vilnius University, Vilnius, Lithuania

Keywords: Lithuania, Lyngby type axes, reindeer antler

Presentation Preference - Oral

In the Lithuanian territory found 32 skeletal bones and manufactured artefacts of reindeers (Rangifer tarandus). Between them in 2014-2016 three Lyngby type implements made out of reindeer antler were found within territory of Lithuania. One of the Lyngby type article dating back to the 4000 to 4200 BC, the other two - 12 000 BC - to Late Allerød - Younger Dryas period. All other articles dating to Younger Dryas period. Traceological, stable isotope, radiocarbon dating, morphological examination on the implements carried out in Klaipėda University laboratories tells us that the one of them was made out of adult reindeer antler and was used as an axe. Wear marks indicate their use as a working tip. The other two were made of reindeer and was used as a hammers connection with leather and fur. Portable Confocal Scanning Light Microscope and Computer tomography scan of a reindeer antler artefacts illustrated of the anisotropic orientation of mineralized collagen fibers. These studies demonstrated the hierarchical structure of reindeer antlers. The trabecular bone is anisotropic, with aligned chains directed parallel to the long axis of the antler beam. Technological research has shown that stoutness articles, as Lyngby type axes, were made of reindeer male antler and hammers - from female antler, because both sexes are members of the same species, and the properties of their antlers could, therefore, have emerged under similar pressures and constraints through evolution. This is confirmed by a reindeer antlers made of hardware functional purpose, which is to date the Northern European researchers were not analyzed until now.

Late Neolithic V-perforated buttons from a female burial in SE Poland - revisiting a case study

Author - Wniewio, Kinga, University of Wrocław, Institute of Archaeology, Wrocław, Poland (Presenting author)

Keywords: Bell Beakers, osseous materials, personal adornments

Presentation Preference - Oral

The aim of this paper is to revisit a case study presented at the 21st Annual Meeting of the EAA in Glasgow in 2015 using results from all analyses conducted and offering an interpretation on their basis. During my presentation in Glasgow I argued that in regard to small and weathered finds it is often impossible to identify the raw material only by macroscopic evaluation but the use of low-invasive archeometric techniques (conventional microscopy, SEM, microCT) can reveal structural micro-features and properties facilitating raw material identification.

It was so in the case of eleven V-perforated bone buttons from a Bell Beaker female grave found at the Sandomierz-Zawichost Hill site in south-eastern Poland. Low power microscopic approach revealed qualitative features indicating that the osseous material used in the manufacture of these buttons might be animal dentine (ivory). If confirmed, it would link this eastern Bell Beaker enclave to the Iberian Peninsula, where the use of ivories for the manufacture of V-perforated buttons is well-known.

In order to test this hypothesis, different analytic non-destructive and low-invasive techniques of imaging and morphometrics were employed: conventional microscopy (high and low power approach), scanning electron microscopy with energy-dispersive X-ray spectroscopy (SEM-EDS) and micro-computed tomography (microCT). The results were cross-checked using Zooarchaeology by Mass Spectrometry (ZooMS) method, developed at the BioCh laboratory of University of York, United Kingdom.

Combined results showed that V-perforated buttons from the Sandomierz-Zawichost Hill site were made of cortical tissue with a fringe of cancellous tissue from a long or a Flat bone (e.g. scapula) of genus Bos (domestic cattle or wild aurochs). It is consistent with what is known about Bell Beaker animal bone assemblages from Central and Eastern European context where cattle bones are the most numerous category of bone.

Although the material is not exotic and as such it does not directly link the Polish Bell Beaker southern group with the Iberian Bell Beakers, it is interesting in terms of bone technology and its significance. In this case it can be argued that the choice of this particular material for the manufacture of V-perforated buttons is meaningful - the buttons are made from a bone (or bones) of familiar animal; this material was easily attainable and manifested mechanical properties known to the artisan. The raw material choice can be thus seen as a conservative act perpetuating familiarity and stability within the group to which the wearer belonged.

This study shows that a comprehensive low-invasive analysis of small and weathered artefacts can facilitate raw material identification and, subsequently, highlight issues connected with the raw material selection and its significance in the past societies.

Zooarchaeological Data and the Historical Sources of Livestock and Breeding at Kurtuvenai Manor

Author - Pakkeronyei, Zsolt, University of Klápeďa, Šélelai’ Asdla Museum, Klápeďa, Lithuania (Presenting author)

Keywords: livestock, manor, zooarchaeology

Presentation Preference - Oral

Kurtuvenai Manor – one of the first fifteenth century’s Manors established in Lithuania, which has been region’s economic and cultural center more than 450 years. In order to understand the livestock, breeding goals and practices at this manor at the time, this research combines an examination of relevant documentary of XV – XX centuries (inventory books of Kurtuvenai Manor and information from letters) evidence with a careful osteological analysis of 3027 bones and their fragments (XV – XXI centuries), gained in archaeological excavations.

Although the size of animal farm varied during different periods nevertheless similar trends are observed. According to the observed data, it can be noticed that the smallest farm existed in the seventeenth century (this tendency was influenced by wars, famine and plague). Animal husbandry of Kurtuvenai Manor was one of the strongest in Samogitia during the management period of the richest Samogitia’s nobleman’s (XVI century – Skalskis, XVII century – Nagurski, XIX century – Pliateriai). This can...
be explained by the economic power of the owners’ estate. During XV – XX centuries livestock was the main source of meat in comparison with wild animals or birds. This data indicates the importance of meat (pork, beef, poultry, fish) and production of milk. The butchery methods, fracture types and the fragmentation level of the bones encountered in manor help to determine the animals’ slaughtering technologies. In XV – XX centuries wild meat firstly added variety to the noblemen’s table and also was a splendid entertainment. Mostly hunted animals were deer (Cervus elaphus), elk (Alces alces) and wild boars (Sus scrofa). Zoological investigations, DNA typing and data of inventory books confirm that here lived the rich noblemen who ate a high-quality meal. This was affected by the material well-being of strong noblemen and their dependence on the nobility of the Samogitian affluent circle. For example, in 1563 Stanislaus Skalski sent 60 partridges for Prussian Duke Albrecht, three years later he sent 100 partridges. We also know that the householders of manors of the seventeenth century already took care of animal husbandry, productivity and improvement of the species. It is believed that at the beginning of the seventeenth century the Dutch cattle came to the major manors in Northern Lithuania, most likely through Riga. Pedigree cattle and horses, which were fed and conditioned better than others, grew only on larger manors. But this innovation spread slowly. Recently, we have integrated our investigations of the excavated bones with technical and analytical development to gain an all-round perspective on social zooarchaeology. As the past researchers, we have to try to realize the full potential of zooarchaeological data and different methods of zooarchaeology.

**TH4-09 Abstract 15**

**Archaeozoology of Port Towns in Poland**

**Author** - Prof. Malakiewicz, Daniel, Uniwersytet Mikolaja Kopernika w Toruniu, Torun, Poland (Presenting author)

**Co-author(s)** - Wejzajca, Martyna, Uniwersytet Mikolaja Kopernika w Toruniu, Torun, Poland

**Keywords:** Archaeozoology, Middle Ages, Towns

**Presentation Preference** - Oral

Between 9th and 10th century strong port centers had been established at the southern Baltic Sea. Some of them played a key role in the history of Pomerania and of Poland. We can list, among others, Gdansk, Kolobrzeg, Szczecin, and Wolin. Each of these centers was developing in a different cultural and environmental context. Archaeozoological research suggests that the role of fish, deer, elk, and wild boar, were significant for them. However, up to date results of analyses, published in numerous articles in Polish language, consider each of the centers separately. Therefore, the aim of this paper is to compare them according to the archaeozoological data. The effect will be to indicate the differences and similarities in the strategies for supply, and to consider the significance of mammals, birds and fish in the historically changing political, cultural and social reality of these centers in the Middle Ages.

**TH4-09 Abstract 16**

**Birds and people on polish seaside in Middle Ages**

**Author** - MA Wiejacka, Nicolaus Copernicus University in Torun, Torun, Poland, Poland (Presenting author)

**Co-author(s)** - Prof. Malakiewicz, Daniel, Nicolaus Copernicus University in Torun, Poland

**Keywords:** birds, archaeozoology, Poland, Middle Ages, polutry, hunting

**Presentation Preference** - Oral

Polish seaside is characterized by different environmental conditions than the rest of the country. Societies living there since early prehistoric times exploited its resources for food supply and for trade purposes. Beside fishes and mammals also birds have played an important role in farming and hunting economy. Although the studies on importance of this group of animals in Polish areas have been taken up rarely so far. This paper is focused on breeding and hunting for birds during the Middle Ages in Poland. Some aspects of birds history on polish Baltic coast were briefly presented mainly in papers about principal sites like Gdańsk and Kolobrzeg. On the base of published data and new research authors will compare obtained picture of birds economy with the rest of the country and observations for other parts of the Europe. Special attention is paid to a social status of domestic chicken and goose consumers in medieval settlements, towns and castles. The introduction of turkey is one of the most important aspect as well. The uniqueness of the coastal area can be observed considering the site in Lubin located on Wolin island. People living there have exploited local avifaunal species such as White-tailed Eagle and Cormorant.

**TH4-09 Abstract 17**

**Did rats abandon a sinking ship? Discovery of animal products from the 14th c. shipwreck in Tallinn**

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**Keywords:** animal products, Medieval Time, shipwreck

**Presentation Preference** - Oral

The archaeological excavations of shipwreck that was found at a construction site in Kadriorg, Tallinn, Estonia in 2015, have resulted in a large amount of spectacular finds. The wreck originates from the 14th century and is a medieval cog like merchant ship. Many everyday items made of metal, wood, birch bark, leather, wicker, textile, clay and stone, have been found both inside and around the ship. There are some burn marks visible on the wreck, which gives reason to assume that there was a fire that caused the shipwreck. Probably the lower part, which was not damaged so much sunk and became covered by sandy sediments quite fast. This caused good preservation conditions also for organic compounds of the materials, including different animal products. The paper focuses on the animal remains found inside in the wreck. This is a unique evidence supporting the information we get often only from the written sources like medieval inventory books or chronicles.

**TH4-09 Abstract 18**

**How to process meat for a 17th century warship**

**Author** - Gönül, Bülent, University of Kiel, Kiel, Germany (Presenting author)

**Keywords:** butchery evidence, GIS, zooarchaeology

**Presentation Preference** - Oral

Researching the fauna remains from the famous VASA, while testing a new GIS based system for displaying and analyzing butchery marks on bones.

The 17th century warship Vasa was launched in 1628 in the time when Sweden was on the rise of their stromboltiden, the time of their greatest power, but the ship capsized around 20 minutes after the launch. This catastrophic event led to one of the best preserved wrecks of all time and provides the opportunity to study a fauna assemblage in the context of a highly complex movable war machine, which would have built a small floating village with over 400 inhabitants and a diverted social structure.

More than 2000 mammal bone fragments could be mapped and specially analyzed within the ship, showing the main provision storage in the hold and distributed spots of presumably personal food at the upper gunwale as well as some smaller bone assemblages from the provision of special individuals or groups. Another 800 fragments must be considered as only partly reliable since their position or information were found outside the wreck.

All bones were, if possible, identified with taxa, skeletal element and side, showing a dominant amount of cattle, some pig and sheep/goat bones and a small amount game and birds. The only probably not food-related bones are 5 cat bones.

A special emphasis was placed on the butchery practice. Following the idea from David Orton (http://www.bonecommons/items/show/1686), GIS shape files for all bigger post cranial bones were created in a higher resolution and from different sides. As an attempt to reconstruct meat cuts all the bones where recorded with a portion based system which can be displayed on the GIS files according to their frequency. Beside from obligatory measurements after Von den Driesch (1976) was the remaining length of the fragments recorded. All bones where weighed and the meat weight was calculated.

The butchery marks were identified as cutting, chopping or sawing and plotted with the direction of the strike as separate layers for each bone on the GIS files.

**TH4-09 Abstract 19**

**Evolutionary history of Baltic seals inferred from the analysis of historical and subfossil samples**

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**Co-author(s)** - Malakiewicz, Daniel, Nicolaus Copernicus University, Institute of Archaeology, Toruń, Poland

**Co-author(s)** - Daugnora, Linas, Klaipėda University, Institute of Baltic Sea Region History and Archaeology, Klaipėda, Lithuania (Presenting author)

**Co-author(s)** - Karlsson, Olle, Swedish Museum of Natural History, Stockholm, Sweden

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**Keywords:** Baltic sea, mtDNA haplotypes and haplotype diversity, seal species

**Presentation Preference** - Oral

Local or global extinctions of large mammals known to have been exploited by humans raise a question of whether the extinction resulted from their exploitation or from natural factors. The extinction of the harp seal (Phocaephus groenlandicus) population from the Baltic Sea is an example of such case. Comparison of population genetic parameters between the Baltic sea, mtDNA haplotypes and haplotype diversity, seal species.
TH4-10 Abstract 02

Technology exchange and iron trade around the Baltic Sea

Author: 
Jouttitjärv, Aine, Henri, Vium, Denmark (Presenting author)

Keywords: metal trade, iron, smithing traditions

Presentation Preference: Oral

From the rock carvings depicting ships in the Scandinavian Bronze Age to the age of the Hanseatic League and its mighty cargo ships, the Baltic Sea has always played an important role as a travel zone, facilitating interregional contacts and dissemination of cultural and technological knowledge. The study of technological practices is indicative of the spread of innovation and the movement of craftsmen, and therefore not only shows the movement of goods but also the transfer of new ideas and the dissemination of people. Prehistoric and medieval production of metals in the Baltic Sea region demonstrates both shared practices and discrete traditions, making it central for our understanding of cultural relations and networks within this area.

This session aims to bring together archaeologists and archaeometalurgists exploring the traditions, continuity, and developments of metal crafts through external influences and innovation from the Bronze Age to the medieval period around the Baltic Sea. The focus will be on the history of technology and traditions of metal production, including aspects of metal working techniques, utilization of tools, and the layout and “chains of production” of workshops. The interdisciplinary nature of the session will encourage discussions between cultural-historical approaches, experimental and archaeometric studies, to enrich our understanding of technological practices and to explore how metals, technologies and traditions were spread and shared within the region.
The traditions of iron smelting and smithing technologies in Denmark from the Iron Age to the Medieval period, is fairly well documented on the basis of metallographic analysis of more than 500 artifacts. Compared to similar analyses from other areas bordering the Baltic Sea, it can be seen, that in pre Roman and Roman Iron Age, there are differences in technologies, that there was only a limited spread of traditions and knowledge.

In this period, the use of steel for cutting edges in tools and weapons developed in the areas south of The Baltic Sea whereas neither welded steel edges or carbonisation were introduced in ten provinces of Denmark. One illustrative example is a number of single edge swords found in the votive deposit at Vimmose on Funen. Most of the swords were made from combination of layers of iron and steel. On the basis of analyses of slag inclusions they were judged to have their most likely origin in the area of present day Poland. One sword on the other hand was made from low carbon iron, and the slag inclusions indicated that it was produced within present day Denmark. Apparently the form was copied with no knowledge of the technology.

A much more developed network seems to have been present in the Viking Age, where similar technologies for example forging knives seem to have existed in the whole area around the Baltic Sea. It shows that there has been contact between smiths throughout the area, and that technological traditions have been exchanged. Iron, and especially higher quality metal as steel, was probably also traded within the area, and slag inclusion analysis shows that steel in Denmark was primarily acquired from abroad. Unfortunately, reference databases are not yet sufficiently developed, especially for the eastern areas, and it is therefore not possible to give a more precise description of the trade routes. Future cooperation on the exchange of analyzes of slag from iron smelting, will be able to open new perspectives in the identification of the trade of metal in the past.

TH4-10 Abstract 03
Vendel period seaxes from Grobin
Author: Aboltins, Artis, Riga, Latvia (Presenting author)
Keywords: Baltic Sea region, Metal Working, Vendel period
Presentation Preference: Oral

There has been little written about the Scandanavian seaxes found on the Eastern shore of the Baltic sea, and this paper is an attempt to present an overview of the finds from the Scandanavian colony in Sieburg (modern day Grobin) in Latvia. Since it is the only known find of this kind from the Vendel period outside their primary territory, it holds the special interest for researchers, but, so far, no special attention has been devoted to the seax finds. There are several fine examples in collection of the National History Museum of Latvia, including one especially impressive longseax over 70 cm in length. After careful examination of the blade one can conclude that it was once a very fine example of bladearms art of the period, consisting of mix of mono-steel and pattern-welded elements. This seax and the technologies involved in the production of it and similar weapons will be the focus of the paper. Examining the other items connected with the burial that contained this seax it is clear that it would once have belonged to a person of importance in his society, so it not only serves as a testimony of the skill of the maker, but also provides us with additional information on the people of this fascinating time period (burial is dated to the late Vendel period (most likely, 8th century).

TH4-10 Abstract 04
Bronze Age fine metal working in Nordic Europe - gold discs and vessels
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Keywords: Fine metal working, Nordic Bronze Age, sun discs and vessels
Presentation Preference: Oral

Gold work was an important means of cultural and social expression and exchange during the Bronze Age, a period particularly rich in golden prestige items. Along Baltic and Atlantic Europe, ideas and peoples moved exchanging information, goods and technological knowhow. This paper deals with the esthetic appearance and social function as well as symbolic meaning of a particular group of luxury items from Scandinavia and Northern Germany, such as ornamental “sun” discs and containers made in gold. It focuses on their fine metal working technology essential to create their specific shape and decoration. The presentation aims in scrutinising the development and interdependence of form, function and technology of gold work. One topic will be the goldsmith’s workshop, its tool kit and materials used, as well as his social role in Bronze Age society. The presentation also intends to highlight the particular decoration techniques and tools applied to these sheet ornaments and luxury table ware.

TH4-10 Abstract 05
Some aspects of the local weapon production in Western Latvia from 9th to 13th Century
Author: Dr. Tomsons, Arturs, Latvian National History museum, Riga, Latvia (Presenting author)
Keywords: Early Medieval, Eastern Baltic, Weapon production
Presentation Preference: Oral

The question of local weapon production in the lands of the western Balts during the end of prehistory and with the beginning or Medieval period and during the Baltic Crusades is closely connected with a problem of formation of the early statehood of the local peoples in the Eastern Baltic. Western Latvian weapons finds, especially more than hundred evidences of the double edged swords, pattern welded spearheads are significant source about warior elites with similar identities across the whole region. These finds also reflect developed craftsmanship and several possible production centers of these weapons in Couronian lands, using both imported material sources, as well as using the skills of local craftsmen working with non-ferrous metals.

TH4-10 Abstract 06
New archaeometallurgical investigations on Bronze Age metal objects from the Eastern Baltic region
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Keywords: Archaeoanmetallurgy, Bronze Age, Metal Objects
Presentation Preference: Oral

This archaeometallurgical study presents new research results regarding Bronze Age metal objects from the Eastern Baltic region. Since the last published analyses from Merkevičius in 1973 and Mödlinger in 2010, this new study sheds more light on the metallurgical development in this remote and seldom investigated region when taking of Bronze Age metalurgy.

Since the Eastern Baltic region lacks own copper ore deposits and metal finds are rare, this project aims to answer various questions, e.g., which sorts of metal occur during the Bronze Age in the Eastern Baltic region? Were the Early Bronze Age objects imported or self-produced? From which deposit derive the used copper ores? What can be said about trade, import and/or self-production within that time span?

The investigated objects can be classified to different chronological periods ranging from the Early to the Late Bronze Age. The metal finds derive from different find spots in Lithuania, Ranniaird district (Russia) and Belarus. Most of them are single finds and one newly discovered hoard find from the Late Bronze Age, Kobbelbude. We present the latest results of the performed analyses. Two analytical methods were applied on approx. 40 samples from metal objects (copper/bronze alloys). First, the chemical composition was determined by energy-dispersive X-ray fluorescence analysis. Using those results, it was possible to classify different material groups and to make statements regarding the alloying behavior.

Second, stable lead-isotope ratios were analyzed for the first time in that region and the results were compared with lead isotope signatures from different copper ore deposits to identify possible regions of origin of the used copper. The geochemical fingerprints of the different deposits were taken into account as well.

TH4-10 Abstract 07
A multidisciplinary approach to the study of Polish silver denarii minted by the early Piastas
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Keywords: Non-destructive analysis, Polish denarii, X-ray fluorescence spectrometry
Presentation Preference: Oral

X-ray fluorescence (XRF) analyses have become a standard method in archaeological science due to their non-invasive and non-destructive nature. Chemical analyses of metal alloys may provide information about the manufacturing process, the provenance of raw materials, and the geographical distribution of ancient mints. A total of 110 silver denarii from the early Piastas (10-11 th centuries AD) belonging to the collections of the National Museum in Krakow and the National Museums Berlin have been studied using micro-X-ray fluorescence spectrometry and the data have been contrasted with archaeological provenance. The research has focused on evaluating the use of this technique as a screening tool for elemental surface characterization of the alloys. All denarii are made of Ag and Cu, with minor amounts of Pb, Fe, Au, Bi, and Zn. Quantitative analyses have revealed silver contents in the 86-97 % range for several of the surveyed coins. Regardless of the problems associated with the use of different
Archaeology of the Baltic region

TH4-10 Abstract 08

Smithies and forges in the Northeastern Baltic from the 11th to 16th century AD

Author: Saage, Ragnar. Tartu University, Tartu, Estonia (Presenting author)

Keywords: Baltic metal working, Historical metalurgy, smithy sites

Presentation Preference: Oral

Smithy sites are quite rare monuments to be archaeologically excavated. This study encompasses sites from Estonia (Paatla, Haapsa-
lu, Kuressaare and Käki), Finland (Gubbucks and Tornimäki) and Russia (Minino i Gal) to get a better understanding of the smithies discovered so far and how has the forge construction changed. Also, ethnographic records of 19th century Estonian smithies are used to illustrate the variability of the different smithy set-ups and when (and how) the conflicting reasoning behind these choices.

In the Northeastern Baltic, the period under investigation can be divided into three stages. Firstly, the Iron Age smithies with pit forges in the 11th and 12th centuries. Secondly, the transitional period in the 13th – mid-14th century, when the urban smiths began to use new forge designs, while some rural smithies continued to operate in the Iron Age traditions. The 13th century marked a period of crusades in the Eastern Baltic, which was followed by the founding of new towns, which brought forth an influx of craftsmen from the already established towns from the West. Thirdly, the developed crafts guilds period from the mid-14th – 16th century, when the continued movement of apprentices had ensured the spread of urban smithy designs and techniques to the rural areas.

While Russian smithies do not necessarily follow the pattern of Finland and Estonia, they provide a valuable source of well-preserved workshops and help to fill the gaps in our knowledge from that period.

TH4-10 Abstract 09

Tracing Multimetal Craftsmanship through Metallurgical debris – Open air workshops and multimetality

Author: Svensson, Andreas. Lund University, Lund, Sweden (Presenting author)

Keywords: Metallurgical debris, Multimetal craftsmanship, Multimetality

Presentation Preference: Oral

Metallurgical debris is far more the informative source material for studying the metal craftsmanship of the past. In comparison to the other sources of information, the debris is far more attention in archaeological research, debris material are more or less confined to the original workshop sites and hence provide direct evidence as to production volume and quality, site location, artisanal skill and operational sequences within the various crafts.

On many sites throughout the “Metal Ages” evidence of both iron smithing and the use of non-ferrous metals can be found. Traditionally, a clear division between these types of crafts has been enforced in site interpretation, separating sites into ferrous versus non-ferrous workshop sites chronologically or spatially. However, the presence of, for instance, smelting slag cakes with droplets of Cu-alloy within their matrix as well as casting debris of both metals and ceramic materials in forges and smithing hearths challenges this strict division.

The thesis project “From Crucible and onto Amil” started in 2015 and focuses on sites housing remains of both metal craftsmanship dating primarily from 500-1000 AD. Within the project a comprehensive survey of sites will be used to evaluate the presence of multimetal craftsmanship in the landscape based first and foremost on the metalurgical debris documented on or collected from them. Sites in selected target areas will be subject to intra-site analysis of their metallurgical remains focusing on workshop organisation, the array of metalworking techniques utilised and the chronological variances of multimetal craftsmanship.

A primary aim in the project is to elucidate the conceptual aspects of complex metalworking. The term multimetality is used to analytically frame all the societal and cosmological aspects of metal craftsmanship. Through this inclusive perspective workshop organisation will serve as examples of how multimetality was manifested on the sites and in the landscape.

TH4-10 Abstract 10

On some aspects of specialized production in Roman Iron Age. A case study of S-shaped clasps

Author: Patalan, Krzysztof. Zentrum für Baltische und Skandinavische Archäologie, Schleswig, Germany (Presenting author)

Keywords: Goldsmith, Roman Iron Age, S-shaped clasps

Presentation Preference: Oral

The main topic of the paper are goldsmith products from the Roman Iron Age in the southern and western zone of the Baltic Sea region with emphasis put on the production of golden and silver S-shaped clasps which were used as a closure of the necklace.

Although one can speak about chainel operatone in context of the individual specimens or in some cases products from limited geographical area such generalizations are not possible to the whole material. The use of certain techniques, order of their application or attempts to bypass them provide important information about local production and can be used to identify the producers or at least to attempt to limit the area of origin of the analysed objects. In the presentation the production of S-shaped clasps will be outlined and compared in the different areas of their distribution. This would show the strength and direction of influences in the goldsmith production of the Roman Iron Age. On the other hand this deliberations – based on the assumption that S-claps may be perceived as both status and group affinity symbol – would allow to discuss those connections between the populations of the Baltic Sea region that were presumably based on heterogamy.

TH4-10 Abstract 11

The path of knowledge - Transfer of knowledge of bronze casting in the Late Bronze Age Scandinavia

Author: PhD Cand. Nilsson, Andreas. Lunds Universitet, Lund, Sweden (Presenting author)

Keywords: Bronze Age, Bronze Craft, Innovations

Presentation Preference: Oral

The Scandinav bronze craftsmanship has been discussed countless times. But the discussion can continue thanks to new discoveries and new approaches within the subject. I intend in this talk to discuss technology dissemination and the availability of bronze casting technology in southern Scandinavia during the Late Bronze Age. Was the knowledge of bronze casting a closed knowledge or was the technology available to more people than specialists in bronze crafts? What paths have new innovations in and function and the knowledge of changes in bronze casting technology taken? Can we see variations and ingenuity of bronze smiths at a local level? Was there space for everyday craftsmen or were all bronze craftsmen specialists? I will try to approach these issues by examining the various steps needed in the chain of production of bronze casting and by discussing different parts of bronze casting technology such as soapstone moulds, crucibles, technical ceramics and examine specific everyday objects made out of bronze such as socketed axes.

TH4-10 Abstract 12

Markers of ethnicity and female power? Some reflections on Scandinavian brooches in Viking Age Rus

Author: Niel, Michael, Uppsala University, Uppsala, Sweden (Presenting author)

Keywords: Baltic metal working, Artefact biography, Runikid dynasty, Viking diaspora, Viking Age Rus

Presentation Preference: Oral

Prehistoric pictures are a special sort of source material. Pictures are not random products – they were created to convey messages. This statement applies especially to the oral culture of the Viking Age. However Viking Age pictures rarely occur as independent monuments. More often, they appear as animal art on metal artefacts. The starting point for my reflections is a group of grandiose brooches from Viking Age Russia.

organisation and placement within the cultural landscape. Many of the sites surveyed so far are interpreted as open air workshops with a relatively long continuity ranging several generations of metalworkers. How is this to be interpreted? Where the multimetal craftsmanship undertaken of temporary character? And if so, why did the metalworkers continue to use the same workshop site for generations?

The concept of multimetality and the possibilities to capture this elusive, yet crucial, element of metal craftsmanship through the study of metalurgical debris will also be discussed in the paper. The surveyed sites and the reconstruction of their internal workshop organisation will serves as examples of how multimetality was manifestated on the sites and in the landscape.
To begin with, a recent ‘object autopsy’ on the famous Gnezdovo hoard revealed that two circular brooches should be regarded as locally made reconstructions of an elder brooch type, once imported from Scandinavia. In fact, no corresponding brooches from mainland Scandinavia display similar amounts of antient Dating. Why was then so much effort put into restoring the Gnezdovo brooches? One intriguing possibility is that these brooches represented heirlooms from an earlier generation of settlers. Presumably, over time some of these heirlooms transformed into important symbols of Scandinavian ethnicity.

Few seasons were investigated the Bandužiai (Žardė) and Bandužiai settlements and discovering archaeological structures: hearths, fireplaces, ore excavation pits, ore burning fireplaces, charcoal production pits, iron smelting furnaces and wells. The purpose of some of the structures is still unknown, but the limited excavation suggests that the Bandužiai site was a major center of iron smelting in the early Medieval period. The Bandužiai settlement was a major center of iron smelting in the early Medieval period. The Bandužiai settlement was a major center of iron smelting in the early Medieval period.

The Swedish gold collars from the Migration period are enigmatic masterpieces of Early Medieval fine metal working. Their refined imagery, complex form and decoration, and sophisticated manufacturing techniques were studied within the scope of an international research project coordinated by Pechsch. A. (Schweig). This paper deals with the technological aspects of these fineries including the ‘chaîne opératoire’ of the production processes and the tools implied. It provides new insights on the collars’ technology chosen by the goldsmiths to create the composite body, the figurative elements and the filigree and granulation work. Especially interesting are the technological features of the construction of the tubular sheet work and the making of the so called miniatures. The specialized and complex knowledge of the makers will be set in the context of fine metal working in the North during the Early Medieval period.

Th4-10 Abstract 14
Iron smelting process in the Žarde-Bandužiai archaeological complex (Lithuania)

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Keywords: chemical analysis, Iron Age, iron smelting
Preprint from each other. So we need of the program of the archaic traits accounting. Also the main dental dimensions (mesio-distal diameter, bucco-lingual diameter, crown height and root height) were measured. Obtained data were compared using the Principal Component Analysis (PCA) with the Mesolithic samples from Latvia (Zvenieky), Russia (Yuzhnyi Oleni Ostrov), Sweden (Scaltingsliden) and Neolithic and Mesolithic series from Ukraine (Vasylivka, Vovnigi-1, Vovnigi-2, Khotyn, Yasinovatka) because some of the Neolithic burials of this region were synchronous to the Baltic Mesolithic.

The results of our analysis showed the population from Donalnia and Spiginas archaeological sites are located in the Lake Birzulis region, West Lithuania. Calibrated 14C data for the Mesolithic graves from Donalnia are around the second part of the VII millennium BC – the middle of the V millennium BC. Spiginas Mesolithic graves belonged to the period from the second quarter of the VII millennium BC to the middle of the IV millennium BC (Osens, Braga, 2009 table 1). According to the results of previous investigations, the complex of non-metric traits in the sample from Donalnia and Spiginas was connected with so called ‘Middle European’ dental type [Batčunienė, Čėnys, Jankevskas, 1992; Batčunienė, Čėnys, 1985, 96; Sutrimas, 2012]. The main features of this type are the absence of eastern traits such as, for example, showings of upper central incisors and distal trigonid crest on lower first molars, and at the same time absolute prevalence of five-cusped lower first molars and high frequency of Carabelli trait on the upper first molars. Middle European complex widely spread in the Middle, East and West Europe. It has a lot of variants inside: some of them are signally distinct from each other. So we need a more precise definition of the dental status of these findings and it is one of the aims of our research. The second one is the comparison of the Lithuanian samples with the Mesolithic findings from the other regions of North, East and Middle Europe for determination of the main directions of biological affinities.

The dentitions from six Mesolithic craniums were observed using ADSUS, Russian dental system, called after A.A. Zubov and the program of the archaic traits accounting. Also the main dental dimensions (mesio-distal diameter, bucco-lingual diameter, crown height and root height) were measured. Obtained data were compared using the Principal Component Analysis (PCA) with the Mesolithic samples from Latvia (Zvenieky), Russia (Yuzhnyi Oleni Ostrov), Sweden (Scaltingsliden) and Neolithic and Mesolithic series from Ukraine (Vasylivka, Vovnigi-1, Vovnigi-2, Khotyn, Yasinovatka) because some of the Neolithic burials of this region were synchronous to the Baltic Mesolithic.

The results of our analysis showed the population from Donalnia and Spiginas belonged not to the clear middle european type, as suggested in previous articles, but to the Baltic variant of this type. Difference between these two variants is in the presence of eastern admixture in the latter. This admixture strongly presents in the North, in the Yuzhnyi Oleni Ostrov, less in Zvenieky and minimally in Lithuania. So we can suggest that its presence depends on the distance from the Baltic Sea. Lithuanian findings lack almost all eastern non-metric markers, exclude the six cusp, but proportions of molar crowns they have close to contemporary Saami, Latgalls and some mongoloid groups. This differ them from all of the Ukrainian samples which belonged to clear middle European dental type, without any eastern admixtures.
TH4-11 Abstract 02
Prevalence of pathological lesions in the Iron Age water burial site Levānuķa, Western Finland

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Keywords: Finland, Osteochondritis dissecans, Paleopathology

Presentation Preference - Oral

Ante mortem tooth loss (AMTL), dental calculus and especially dental caries prevalence was lower than in later periods in Finland. The prevalence of periapical lesions in the lower molars, however, were slightly higher in Levānuķa than in later periods. This may be explained by advanced dental wear or trauma. The alveolar-CÉJ distance was also lower although teeth in general had more wear. This speaks for diet change (increase in carbohydrates and softer foods) in the later Iron Age, medieval and early post-medieval periods in Finland. For dental caries, however, even the existence of the pathogens causing dental decay in the whole material can be questioned, since lesions are so few and some of them are not typical caries lesions and could be taphonomic or developmental defects of the dental enamel.

Most striking feature in the paleopathological state of the Levānuķa people is that joint lesions are found more than usual in bioarchaeological studies. Especially the knee and ankle joints are affected more than usual. Most of the joint lesions resemble osteochondritis dissecans, but its prevalence exceeds the normal crude prevalence rate of osteochondritis (0.5%) by far.

Trauma prevalence is similar to other bioarchaeological studies. Also periodontal and localized infections did not reveal anything surprising. Cribra orbitalia, especially in subadult skulls seems to be a slightly lower than the later periods in Finland.

Schmor’s nodes, spondylolysis, enamel hypoplasia, osteoma and localized osteolytic lesions prevalence rates were similar to previous bioarchaeological studies. Partial sacralization of the left side was observed in three individuals.

Formisot, T. 1993: An Osteological Analysis of Human and Animal Bones from Levānuķa, Vammalan kriipsaino o. Vammala

TH4-11 Abstract 03
Evidence for venereal syphilis in post-medieval Riga, Latvia

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Keywords: congenital syphilis, infectious disease

Presentation Preference - Oral

This research aims to evaluate the prevalence of venereal syphilis (VS) in two post-medieval cemetery populations from Riga, Latvia. Both skeletal populations were excavated prior to building and reconstruction work. Two hundred and seventy-four individuals from the Riga Dome Church cemetery (RDCC), and 198 individuals from the St Peter’s Church cemetery (SPCC), dating from the 16th – 17th centuries AD were included in the analysis.

To estimate age at death of the adult individuals, degenerative changes of the pelvis were evaluated, while sex was based on the morphology of the pelvis and skull using standard methodology. Age of non-adults was estimated according to dental development and eruption, using long bone length if dental analysis was not possible. All individuals were then observed for pathological changes possibly associated with VS, including destructive lesions on the outer surface of the skull vault and in the long bones. As well as bilateral, extensive new bone formation on the long bones of arms and legs. According to the morphological analysis, there were 108 males, 80 females and 86 non-adults in the RDCC population, and 74 males, 45 females and 77 non-adults in the SPCC population. Six individuals from the RDCC and two from the SPCC with lesions possibly associated with VS were selected for further analysis.

Pathological changes on the outer surface of the skull and on the long bones of legs characteristic of VS were observed in four female and one male individual from the RDCC. In addition, changes possibly related to late congenital syphilis were observed in a 10-year-old non-adult individual from this cemetery. All these individuals had been buried in a small area adjacent to the Northern wall of the Riga Dome Church, and it has therefore been hypothesised that it belonged to a hospital.

There were only two individuals with possible VS from the SPCC, a female and a male, both aged between 20 and 30 years at death. The skeletons were incomplete, and the diagnosis was based on bilateral, extensive new bone formation on the arms and legs, along with cortical thickening of the long bones. St Peter’s Church of Riga was associated with wealthy traders, but the cemetery outside the church mostly accommodated the ordinary, poor residents of Riga who belonged to St Peter’s parish. The skeletons of these individuals found during the excavation, mainly dress fittings, confirmed the presence of this lower status population group in the excavated area.

The evidence for VS from these two post-medieval populations complements historical data about the spread of the disease in Riga during the 16th – 17th centuries AD, along with the development of sea trade and the growth of Riga as a significant port city in the Baltic region. It also helps to understand how VS was introduced into the territory of Latvia: the only individuals with possible VS in the archaeological populations of Latvia have so far been found in Riga and Ventspils, which were relatively large port cities in the Baltic Sea trade route during the post-medieval period.

TH4-11 Abstract 04
Cribra orbitalia and trace elements in subadults from a 17th–18th century cemetery in Latvia

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Keywords: Bioarchaeology, Paleopathology, Trace elements

Presentation Preference - Oral

Cribra orbitalia (CO), or porotic hyperostosis of the orbital roof, is one of the most common pathological conditions found in archaeological skeletal remains of subadult humans. Reaching frequencies higher than 50% in many prehistoric samples, CO has been generally connected to a variety of factors including infectious disease and malnutrition. In this study, we tested the relationship between CO and trace element concentrations in 28 subadult skeletons from a 17th to 18th century cemetery in the historic town of Jēkabpils, Latvia. Bioarchaeological evidence indicated high mortality for children in this cemetery; half of the burials were children under the age of 14, while a third were under the age of four. Life expectancy at birth was estimated to have been only 21.6 years. Seven of the 28 subadults (25%) showed evidence of CO, but only those in age groups of 1-5 and 5-11 years old. Trace element concentrations measured by Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) showed no relationship between presence or absence of CO and levels of manganese, zinc, strontium, barium, copper, cadmium, or lead (p>0.05, one-tailed t-test, unequal variances). However, a significant relationship (p<0.05) was found between the presence of CO and decreased levels of iron. Further, the relationship between CO and decreases in copper and lead approached significance (p = 0.056). These results support the hypothesis that CO is related to iron deficiency, and suggests that deficiencies in other trace elements (e.g., copper) may be involved as well.

TH4-11 Abstract 05
Fins in the light of ancient mitochondrial DNA

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Keywords: Ancient DNA, Finnish population history, mitochondrial DNA

Presentation Preference - Oral

The historical migrations and relations of mankind are currently under an intense investigation through novel means in archaeological sciences. Studies illuminating the specifics of our past use wide range of interdisciplinary methods, such as isotopic analysis and ancient DNA (aDNA). Ancient DNA (aDNA) has proved a powerful tool in elucidating the genetic changes in populations, with an unprecedented precision. Mitochondrial DNA (mtDNA) allows the maternal lineages to be followed back in time. Comparing the distributions and divergence of mitochondrial haplogroups helps revealing past migrations and shifts in the genetic structure.
As a modern population, Finns are well known for an abundant record of genetic research. There are, however, no ancient DNA studies focusing on Finnish population history before now.

We present the results of ancient DNA analyses of 81 individuals from the territory of today’s Lithuania, Latvia and Estonia. In this paper we aim to show how these processes affected the Eastern Baltic region where the archeological record shows continuity and change within this understudied region and how they are reflected in today’s Baltic populations.

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Keywords: ancient DNA, bioarcheology, Eastern Baltic

Presentation Preference: Oral

Recent studies of ancient genomes have revealed two large-scale prehistoric population movements into Europe after the initial settlement by modern humans: A first expansion from the Near East that brought agricultural practices, also known as the Neolithic revolution; and a second migration from the East that was in a genetic component related to the Yamnaya pastoralists of the Pontic-Caspian steppe, which appears in Central Europe in people of the Late Neolithic Corded Ware and has been present in Europeans since then in a decreasing North-East to South-West gradient. This migration has been proposed to be the source of the majority of today’s Indo-European languages within Europe.

In this paper we aim to show how these processes affected the Eastern Baltic region where the archeological record shows a drastically different picture than Central and Southern Europe. While agricultural subsistence strategies were commonplace in most of the latter by the Middle Neolithic, ceramic-producing hunter-gatherer cultures still persisted in the Eastern Baltic up until around 4000 BP and only adopted domesticated plants and animals at a late stage after which they disappeared into the widespread Corded Ware culture.

We present the results of ancient DNA analyses of 81 individuals from the territory of today’s Lithuania, Latvia and Estonia that span from the Mesolithic to Bronze Age. Through study of the uniquely inherited mtDNA and Y-chromosome as well as positions across the entire genome that are informative about ancient ancestry we reveal the dynamics of prehistoric population continuity and change within this understudied region and how they are reflected in today’s Baltic populations.

Two boat-graves, Salmė I and Salmė II, were found and excavated in 2008–2011 in Saaremaa, Estonia. They are unique in the European context regarding the remarkable number of human burials inside the boats. Osteological and archaeological examinations have given indications of sex, age, and possibly social status. However, with recent developments, modern DNA technology can enable a comprehensive genetic analysis. Today we can get information about ancestry, origin, gluten and/or lactose intolerance, family relationships and sex. It is also possible to predict physical appearance with regards to hair, eye and skin color, length, wet/dry earwax, body odor and BMI.

The introduction of next generation sequencing (NGS) has opened up a whole new field allowing numerous analyses that would not otherwise have been possible. We will use NGS technology and massive parallel sequencing for a detailed genetic analysis of the Salmė materials along with current archaeological methods to generate a database with DNA profiles and information about individuals from the boat graves. Ancient skeletal remains present a number of challenging features where the amount and integrity of recovered DNA is limiting factors. We will use NGS technology to overcome many of the challenges in a detailed and genetic analysis. The assay provides the opportunity to compare DNA profiles of Viking age remains to ancient and contemporary European populations for information about ancestry and the migrations in ancient times. Our data may also provide information about phenotypic traits of these sea-traders from early Viking ages.
TH4-11 Abstract 10

**Human bone AMS 14C dating and the freshwater reservoir effect?**

**Human bone AMS 14C dating and the freshwater reservoir effect?**

**Author:** Dr. Kiruti, Laurynas, Lithuanian Institute of History, Vilnius, Lithuania (Presenting author)

**Keywords:** East Lithuania, Freshwater reservoir effect, Radiocarbon dating

**Presentation Preference - Oral**

The chronology of Baltic tribes’ Roman period – Viking age archaeological material has up till now been built upon typological dating of artefacts, mostly those discovered at burial sites. However, the lack of chronological reference points is becoming increasingly evident. In many cases, sequences of particular artefact assemblages are sufficiently definite, but unrelated to absolute dates. Radiocarbon dating of series of samples associated with different artefact types or other archaeological markers should contribute a great deal not only to dating particular sites, but also to testing and correcting typological shemes and thus advancing the capabilities of relative chronology.

In order to achieve the above-mentioned goals and to test the research potentials in this field, a project was carried out during which 30 human burials were AMS 14C dated. The samples (11 of unburnt bone, 17 of cremated bone, and 2 of charcoal from cremation burials) from Roman period – Viking age East Lithuanian regions were selected to cover all chronological horizons (c. 2nd century AD to c. 10th century AD) and to obtain radiocarbon dates associated with much artefact types as possible. Special attention was also paid to the construction of the burial, i.e. in selecting the samples, every effort was made to represent a maximum variety of construction features, which are usually considered to be chronological indicators. Calibrated radiocarbon dates were statistically compared with the ones determined on the basis of the grave goods employing all currently available typological schemes.

The radiocarbon dates appeared to be unexpectedly old compared to the typological ones, and this can be hardly explained by the extraneousness of the reservoir effect alone. In only 18 instances did the intervals of absolute and relative dating overlap. The collected data, however, offer an opportunity to set a new goal for the study, i.e. to search for the source of the date offsets, and the possibilities of eliminating them. Overly old radiocarbon dates in similar contexts are generally associated with the freshwater reservoir effect. The results of radiocarbon dating demonstrate that this effect should be considered and needs special regard. In order to evaluate the possible significance of the effect’s impact, to determine the reservoir age, and to verify the possibility of eliminating this effect, additional investigations need to be conducted. At this stage of research, additional radiocarbon dates of related contexts are necessary. Another important research direction should be determination of the quantity of food of aquatic origin in contemporary human diet. For the material of the above-mentioned period and region, radiocarbon dating alongside with stable isotopes δ13C and δ15N analysis of human and horse burials seem to be the most relevant methodological approach in order to assess the differences between radiocarbon ages of those stratigraphically related bone samples which are affected by the freshwater reservoir effect and those which are not. It would likely allow the modelling of the real age of human bone samples – both those dated during the project and those which will be dated in the future.
Co-author(s) - Shotts, Sabrina, Smithsonian National Museum of Natural History, Washington, United States of America
Keywords: execution, Human remains, osteology
Presentation Preference - Oral

Investigating the human remains from the Tallinn gallows hill is part of an ongoing study of Estonian execution sites. The study involves field work and excavations of uninvestigated gallows hills, as well as analyzing material from previously excavated sites in Estonia. Comparisons will be made with data from neighbouring countries, and the ultimate goal is to provide a clearer picture of the history of executions in Estonia. The main gallows site in Tallinn was excavated in 1994 as part of a construction project. Most of the site was dug through, and it is the so far most completely excavated Estonian execution site. The stone gibbet was erected around the 14th-15th centuries and was in use until the middle of the 18th century. During the rescue excavations a triangular shaped and partially preserved structure foundation was encountered, and also numerous human remains: at least twenty complete skeletons together with approximately a hundred commingled skulls located inside the gallows structure. During the excavations, these human bones were interpreted as originating from executed individuals.

The mixed human remains were subjected to preliminary investigations in the mid-1990’s, but no thorough osteological analysis has so far been done for this extremely interesting material. Now, 20 years later, these remains will therefore be re-analyzed, with a particular focus on answering research questions such as identifying all the traumas that could be related to execution or violent death, and to determine age, sex, and pathologies - which age/sex group was executed the most, and where there any subadults among the dead?

TH4-11 Abstract 16

Hard lives by land and sea: Vertebral pathologies as manual labour indicators in a comparison of Napoleon’s soldiers’ and Nelson’s sailors’ skeletons

Author - Savulya, Sandra, Bournemouth, United Kingdom (Presenting author)
Co-author(s) - Smith, Martin, Bournemouth, United Kingdom
Presentation Preference - Poster

During an excavation in Vilnius in 2001 a mass grave was uncovered containing over 3000 individuals, later identified as Napoleon’s soldiers from his unsuccessful 1812 campaign against the Russian Empire. In 2007 the burial ground of the former Royal Naval Hospital was excavated in Plymouth, UK. The graves that were excavated contained more than 150 British sailors dating from broadly the same period as the Vilnius mass grave. These two excavations therefore provide an excellent opportunity to compare broadly contemporaneous groups of servicemen that are very similar and at the same time very different.

The current project focuses particularly on spinal pathology and the respective effects that different kinds of manual labour might have had on individuals from the two groups studied. Whilst both groups are likely to have had rigorous demands placed on them by their respective occupations, the current study considers the extent to which varying kinds of habitual activities will have produced different patterns of alteration and pathological responses in this crucial part of the skeleton.
TH4-12

WESTERN BALTS IN THE IRON AGE

Thursday, 1 September 2016, 09:00-13:00
Faculty of Philology, Room 10

Author - Shirshkova, Roman, Vilnius university, Vilnius, Lithuania
Co-author(s) - Skvortsov, Konstantin, Kaliningrad State Museum of History and Art, Kaliningrad, Russian Federation

Presentation Preference - Oral

The session is dedicated to the Western Balts social, economical and cultural development in the described period (from the 1-2nd to the middle of the 13th centuries AD). The problems of the development of artefact types, archaeological sites and contacts zones altogether with questions on chronology and innovative methods of dating of the Prussian, Curonian, Scialvian and other archaeological cultures of the South-East Baltic region will be discussed at the session.

TH4-12 Abstract 01

The Scandinavian influence upon Western Latvia: the case study of Grobinas Archaeological Complex

Author - MA Santa, Jansone, University of Latvia, Riga, Latvia (Presenting author)
Keywords: Curonians, Grobin, Scialvians

Presentation Preference - Oral

The increasing interest has been drawn to the Scandinavian expansions in the Viking Age, while leaving aside earlier period, which laid the foundations of future character of the Viking Age. The main aim of the paper is to identify the role and meaning of Grobinas, in the late prehistoric Western Latvia and entire Eastern Baltic region, analysing character of the Scialvian colony and the mutual relations between colonists and Curonians. The study uses both written and archaeological sources.

TH4-12 Abstract 02

The cemetery of Linkuhnen and the cultural exchange between Western Balts in the first millennium

Author - Dr. Jahn, Christoph, Museum für Vor- und Frühgeschichte Berlin, Berlin, Germany (Presenting author)
Keywords: Chronology, Migration Period, Nemunas

Presentation Preference - Oral

The cemetery of Linkuhnen at the Nemunas River is best known for the large number of swords and other weapons from the Viking Age. Only little attention has been paid to the various finds from the Roman Iron Age and Migration Period in Linkuhnen. The analysis and re-evaluation of the archaeological objects and archival material from excavations between 1928 and 1939 allow for a new perspective on this important site. The reconstruction of the excavation results provides a comprehensive understanding of the chronological situation at Linkuhnen for the first time and show a continuous usage of the cemetery from the Roman Iron Age and the Migration Period to the Viking Age (2.-11. century AD) with almost 500 burials and over 5000 grave goods. The finds from the Migration Period are indicators for long-distance trade and communication between Prussians, Scialvians, Curonians and other archaeological cultures in the first millennium. The presentation will offer a closer look at the fibulae from Linkuhnen and an overview of the changing cultural relationships to the neighbouring areas during the 1000 years of occupancy of the site. The interpretation of Linkuhnen is closely related to its geographic position close to the Nemunas River and the alteration of the course of the Nemunas at the end of the first millennium.

TH4-12 Abstract 03

Preliminary considerations on the technological variation within Baltic ware pottery

Author - MA Sulte, Alise, National History Museum of Latvia, Riga, Latvia (Presenting author)
Keywords: Baltic ware, Latvia, Potters’ wheel

Presentation Preference - Oral

The potter’s wheel is one of the principal technological innovations of the Late Iron Age (10th - 13th century). Through Baltic ware pottery, its use rapidly spreads across the Baltic Sea region. This paper focuses on the variability of potting-techniques in Latvia during the adoption of the slowly rotating potter’s wheel and Baltic ware pottery. As indicated by archaeological material, both Eastern and Western Latvia are part of the Baltic Sea trade network. It is the path along which potters spread their goods and skills. However, when conducting a more detailed analysis of Baltic ware, the use of potters’ wheel is subject to distinct local variations. In the East, there appears to be a sudden switch from the previous potting tradition to the new Baltic ware. There is little to no interlaying period of varying hybrid-forms. It seems that the technology and the skills for using it were acquired almost at the same time. In the West the potters’ wheel is taken up only partly, preserving previous pottery production methods and using them alongside the new methods. The handmade manufacturing tradition was not forgotten, in fact, hand-made pottery was still produced until the fourteenth century. This paper aims to show a different pattern of relation of the local people to the changing world around them through the acquisition of Baltic ware and the potter’s wheel. The differences of taking up the new technological innovation could not have originated just from differing placement within the trade network. Both regions have equal access to the new technology. However while some take it up rapidly others seem more hesitant. The braking and remaining of thousands of years old pottery production traditions was influenced by longstanding socio-economic paradigms. Further discussions on potter’s wheel variation might reveal some important playing factors within these paradigms.

TH4-12 Abstract 04

Belt hooks, fishing lures or clothing fasteners?

So-called belt hooks in the Western Baltic lands

Author - Dr. Wajdył, Sławomir, University of Warsaw, Warsaw, Poland (Presenting author)
Presentation Preference - Oral

The South-Eastern coast of the Baltic Sea seems to be a zone of significant concentration of the so-called belt hooks. So far, we haven’t realized the scale of the phenomenon, usually citing just a few of the finds from the Western Baltic lands. In the most complete catalogue of the finds about 20 objects were listed, with nearly half of them found at the burial ground in Kaup near the town of Muromskoe (Miahuava). Author of the paper has gathered information about over 40 ‘fasteners’. Investigated objects are leaf shaped or similar bronze, rarely iron plates with one end provided with a hook, and the other with S-shaped eyelet; both ends are bent to the opposite sides.

The so-called belt hooks were discussed in the past. The problem that attracted special interest was the function that the belt hooks served. Several interpretations were presented, however, most of scholars believed they were belt fasteners (Ge. Gürtelhaken). An alternative explanation assumed that they were fishing lures/hooks. The author of the paper will focus on few issues. First of all, results of analysis of the distribution of ‘belt hooks’ will be presented. Another issue of a significant importance will be the chronology of the investigated objects. A special attention will be paid to the problem of their function. Were they belt hooks, fishing lures or buckles for fastening clothes?

TH4-12 Abstract 05

Products Made with Inlay and Plating Techniques in the Ancient Prussia in the XI - XIV Centuries

Author - Khokhlov, Alexandr, IA RAS, Tver, Russian Federation (Presenting author)
Co-author(s) - Skvortsov, Konstantin, IA RAS, Moscow, Russian Federation
Keywords: Ancient Prussia in the XI - XIV centuries, the techniques of inlay and plating

Presentation Preference - Oral

Different products made using the techniques of inlay and plating iron with base and precious metal were known in Prussian applied art since the end of Viking era. This technology wasn’t applied in material culture of early middle-ages Prussians. It is unknown where was the source for such sophisticated jewelry technologies often applied Prussian masters at one a thing from start the XI century. These technologies might be the result of multilateral contacts with Scandinavian and eastern territories and perhaps the territories beyond the Volga. These technologies had two chronological stages in Prussia. The first stage: the XI - XII centuries. Products of this stage have intricate geometrical shapes that indicate some connection with early Scandinavian samples. Time of their appearance in Prussia is similar with such decor spreading in neighbor territories of the Kursi and the Finns. The inlay was used as for arms (sword pommels from Irzekapinis, Swifty); (Zimmerbude), plugs of spearheads from Vetrovo and Fedorovo (Maldaiten), pins, inlayed parts of harness from Mutna, Murosmkas (Laptiau), battle-axes from Murosmkas as for riders and horses outfit – sternups, bit, cover plates for harness belts, buckles. The plating was used for decorating harness (cover plates, pendant) and some fillets made from tin or bronze with silver foil cover. The most remarkable findings is pole-axe from Murosmkas, spearheads from Koverno, Fedorovo and Kaln, parts of harness from Guriievsk (Klein Heide) and Voinos (Oschulstein). Such decor has parallels in more early decorative elements of the Baltic Sea region. The second stage: the XII - the beginning of XIV centuries. It is specified by appearance of numerous products (iron parts
of sword knots and belts, spurs for riding and buckles of spurs, arms like the sword from the Balga castle surroundings and sword hilt from Marienwerder) decorated with geometrical and zoomorphic ornament like image of horned animals ("goats of Perkūnas god?") made in unusual for Prussia style with using wire and foil from different metals. Some researchers had suppositions about their eastern origin connected with the movement of the Mongols in Eastern Europe in the XIII century. Such supposition has its reason considering geography of findings (Moravia, Poland, Kaliningrad region (East Prussia), Belgorod region). New findings of this stage goods (belt plates, spurs) are represented in materials from burial ground in Fedorovo, Ruvnina Dolna (Unterplenen, Równina Dolna, Poland), Prudnow/Alt Wehlau, Simonischken, Klincovka (Wilkas, Kunterstrauch), Rybachy (Stangenwalde). Such artifacts are also known in Belorussia and Lithuania that can be explained by the migration of the population West-Baltic region caused by crusader expansion. Numerous décor elements connected with Christianity (different images crosses) appeared in this period. This stage is characterized by the reduction of products plated with silver that was in active usage at the first stage. Mass use of these technologies passed away among Prussian jewelers. In this period such goods served as status indicating jewelry of Prussian nobles. This jewelry tradition passed away completely perhaps under the influence of European fashion after absolute conquest of Prussian tribes by the Teutonic Order.

TH4-12 Abstract 06

Western Balts after the Vikings and just before the Crusades.
Finalisation of the post-doc project

Author - Dr. Shiroukhov, Roman, Vilnius University, Vilnius, Lithuania (Presenting author)

Keywords: Archival data, Chronology, Western balts

Presentation Preference - Oral

During the several last years of preparation of PhD thesis about Prussians and Curonians contacts in the 10/11th-13th centuries and the Post-doc project, dedicated to the Western Balts social, economical and cultural development in the described period, the unique archaeological archives and artefacts database of the 37th scientific institutions from the 8th countries has been collected. Following the tradition of the transregional research of the Western Balts, established by Carl Engel and other East Prussian archaeologists and working in all the major archaeological collections of the Baltic sea region, connected to the Western Balts culture of the late 10th-13th centuries, with a particular consideration on former “Prussia Sammlung”, the picture of development of the whole South-East Baltic region on the basis of archaeological data was elaborated. Considering this, catalogues, maps and analytics for the each general artefact type, burial custom and social (cemeteries based) structure were prepared and partially published. The very first draft of the book reviewed by 2 senior researchers was sent to the Research Council of Lithuania in March 2015. The basis of the draft represents the dissertation, significantly supplemented with data collected during the implementation of a post-doc project in 2013-2015, as well as some new ideas and theories about the development of the South-East region of the Baltic Sea in the 10-13th centuries. The final stage of the preparation of the pos-doc project book will be presented at the session.

TH4-12 Abstract 07

A Heraclius solidus - an Avar find from Sambia

Author - Dr. Zapolska, Anna, Institute of Archaeology, Warszawa, Poland (Presenting author)

Keywords: Avars, Heraclius, solidus

Presentation Preference - Oral

In 80’ of 20th century a unique find was made in Sambian Peninsula. During excavations a Heraclius solidus was discovered – the only so far Byzantine coin from this region. Gold coins of Heraclius were minted in big numbers and served as source of tribute payment for Avars. The time of paying these tributes to Khaganat was very short – it lasted only few years – as long as Avars threatened to the Empire’s borders. Even though there are numerous finds of these coins in Lower and Middle Danube, in Carpathian Basin and further to the north up to Middle and Lower Prine. One such coin was found on Polish lands. The one from Sambia is the farthestmost find and isolated at the same time. The artifacts, which can be linked with Avar influence found within West Balts Culture Circle are rare. Among them there are mostly belt fittings, elements of harness and sporadically parts of jewelry. The coin then arises suspicions and questions on it’s origin, time, ways and circumstances of the inflow.

In my paper I will present new ideas on this matter – contrary to common opinion, that Byzantine coins were brought to the north from the Carpathian Basin through Slaves, there were the rests of Germanic tribes, who should be linked with this mystery and unique find and it’s appearance at the Baltic shore.
Advancement in the use and application of scientific techniques and methodologies in archaeology have significantly altered and contributed to our knowledge of the past. Many of the greatest examples of the research reconstructions of the past have been achieved through the integrated application of multidisciplinary methodologies. This theme seeks contributions that examine how the combination of interdisciplinary research methodologies have affected and influenced development in all areas of archaeology. Debates on both the advantages and the limitations of scientific techniques are invited, together with case study examples that illustrate the improvement of quality and reliability in particular analytical methods.

Closely related to long-standing scientific methodologies in archaeology, bioarchaeology is increasingly presenting a new focus on application of a variety of biological research platforms to our understanding of the past. Employing new technologies, new methodologies and new knowledge from biomedicine, chemistry, physics and biomolecular research, these complement our understanding of the past by adding a “biological dimension” to archaeology. In this theme, we call for contributions and discussion on various aspects of our understanding of the past by adding a “biological dimension” to archaeology.

INVESTIGATING GEOCHEMICAL AND PETROGRAPHIC METHODS FOR FLINT IDENTIFICATION IN ARCHAEOLOGY

Friday, 2 September 2016, 09:00-13:00
Faculty of History, Room 217
Author - Sobkowiak-Tabaka, Iwona, Institute of Archaeology and Ethnology
Polish Academy of Sciences, Poznań, Poland (Presenting author)
Co-author(s) - Werra, Dagmara H., Autonomous Unit for Prehistoric Flint Mining in Warsaw, Institute of Archaeology, Warszawa, Poland
Co-author(s) - Hughes, Richard E., Geochemical Research Laboratory, Portola Valley, United States of America
Presentation Preference - Workshop

During the Stone and Early Bronze Age, flint and chert were the most widely used raw materials for making various types of tools and weapons. Along with dyes (used in burial rituals) and shells, lithic raw materials are among the most important items available to archaeologists to document long distance distribution, exchange networks, and mobility in Stone Age. Given this, precise identification of the outcrops of siliceous rocks-based on their mineral and chemical composition-is of crucial importance in determining the geologic/geographic areas from which artifacts originated. Because flint is notoriously difficult to source using macroscopic means, instrumental methods of analysis, e.g., energy-dispersive x-ray fluorescence (EDXRF), laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) trace element analysis, scanning electron microscope (SEM), electron probe micro analysis (EPMA) and micropaleontological analysis all have been explored to help attribute artefacts to their source of origin and to distinguish among and between individual varieties of siliceous rocks.

This session will be devoted to geochemical and petrographic investigations of flints, including their potentials and limitations. We welcome a wide range of presentations dealing with research on different kinds of siliceous rocks, in any period of time and space, and hope the session will provide new directions for future research into the important problems of flint provenance studies.

ARCHAEOPETROLOGICAL STUDY OF THE LITHIC INDUSTRY FROM “HORT DE LA BOQUERA” SITE (TARRAGONA, SPAIN)

Author - PhD student Rey-Sólo, Mar, University of Barcelona, Barcelona, Spain (Presenting author)
Co-author(s) - Garcés-Argüelles, Pilar, University of Barcelona, Barcelona, Spain
Co-author(s) - Mangado, Xavier, University of Barcelona, Barcelona, Spain
Keywords: Archaeopetology, Flint, Raw materials
Presentation Preference - Oral

The Epipaleolithic site of “Hort de la Boquera”, dated from 12,250±60 BP to 11,850±45 BP and 11,775±45 BP, is located in the north-eastern part of Iberia. The complete stone tool assemblage includes up to 24,000 flint artefacts. This presentation is the first approach to the analysis of the raw materials through an archaeo-petrological study. First of all, results were obtained by use of mineralogical techniques: macroscopic and microscopic (petrographic) analysis, Scanning Electronic Microscopy (SEM), Micro-Raman and X-Ray Diffraction (XRD), thus combining mineralogical, petrological and micropaleontological methods. Additionally, a geochemical technique was applied: LA-ICP-MS. One of the aims of this presentation is to show the results that were obtained in this study and to demonstrate the advantages and disadvantages of each technique used. Finally we will show the initial results of the project’s geological surveys conducted in the area, which has allowed for the study of several primary outcrops of siliceous raw materials. The analysis of these sources of raw material and their comparison with the stone tools recovered in Hort de la Boquera rockshelter have led to an initial approach to the potential sources of supply of the Epipaleolithic groups that occupied this rockshelter. Together, these results make this study the most comprehensive analysis of the raw materials to have been carried out in the area, and will therefore be a breakthrough in our knowledge of the economy of the prehistoric communities, and thereby helping in the understanding of the reasons for certain human behaviours.
Sourcing prehistoric chert artefacts from Malta using new non-destructive techniques

Author - Chatzipalagkou, Petros, University of Cambridge, Cambridge, United Kingdom (Presenting author)

Keywords: Chert, Malta, Sourcing

Presentation Preference - Oral

The purpose of this paper is to present petrological/geochronological techniques (e.g. LA-ICP-MS), which can contribute to the investigation into the origin of chert assemblages found in prehistoric sites in Maltese islands. This research is part of a greater project (FRAGSUS) investigating the extent to which these islands were laboratories of human activity and, in particular, their degree of connectivity with neighbouring areas. The project focuses on the Stone Temples on Malta (between 4th and 3rd millennia BC) and identifies the circumstances under which these unique monuments were built.

Although these stone artefacts have been studied in the past, the research on their sources has been inconclusive. The advantages of these techniques are: their great accuracy, the speed with which results are obtained and, most importantly, they are non-destructive. They are considered perfect for identifying the mineralogical and geochemical context of rock samples. These specific characteristics, combined together, can be great indicators of the origin of these chert assemblages.

Finally, the main principles, functions, equipment and limitations of these techniques will be demonstrated. Secondly, preliminary results from both chert assemblages and chert outcrops from Maltese islands will be presented. Moreover, this paper will also show how the results should be processed in order to obtain the necessary and useful information in sourcing chert assemblages. Finally, a comparison will be made between these techniques and those used in similar research in western Greece.

Renewed petrographical and geochemical studies of flint from secondary deposits: Belgian case study

Author - Dr. Moreau, Luc, McDonald Institute for Archaeological Research, University of Cambridge, Cambridge, United Kingdom (Presenting author)

Co-authors - Dr. Farenhorst, Paul, Stak Paleolithe, Vilvoorde, Belgium; France

Keywords: Flint, Geochemistry, Neanderthal

Presentation Preference - Oral

The western region of the English Channel is an archaeologically rich area encompassing the French coastline and the plateaus of the Channel Islands located on the shallow Continental Shelf. Although modern sea level has obscured much of the prehistoric landscape for cooler periods during the ice age, the region would have resembled a terrestrial plain with a diverse biotope ranging from boreal forest to tundra conditions, home to both Neanderthals and the large fauna that they hunted. This study is focused within the Middle Palaeolithic of the area, a time period represented well in the western Channel for example at large sites such as La Cotte de St Brelade, Jersey. It aims to shed light on the now largely submerged Neanderthal resource base by reconstructing procurement of their preferred raw material, flint (here referring to silicic rock of Cretaceous age). On the Continental Shelf we know that primary bedrock flint was likely only available from several small chalk outcrops to the north of Jersey, whilst secondary flint assemblages were present in rocky beaches and carried by nearby paleo-rivers. These flint pebbles, removed from their original context, are very variable with thick, pitted, cortex and visible inclusions, derived from multiple parent sites.

This research focuses on artefacts within the La Cotte de St Brelade assemblage that have likely been procured from a single outcrop in the region. This study demonstrates the use of FTIR for provenancing flint in Denmark

Author - Dr. Merkyte, Inga, Virum, Denmark (Presenting author)

Co-author(s) - Dr. Hauzeur, Anne, Sarl Paléotime, Villard-de-Lans, France

Co-author(s) - Dr. Jadin, Ivan, Anthropology & Prehistory, Royal Belgian Institute of Natural Sciences, Brussels, Belgium

Co-author(s) - Dr. Gibson, Sally, Department of Earth Sciences, University of Cambridge, Cambridge, United Kingdom

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Keywords: Flint, Geochemistry, Neanderthal

Presentation Preference - Oral

Infrared spectroscopy appears to be cheap and fast method for provenancing flint resources. Samples collected from three different outcrops in Denmark (Stevns, Falster & Aalborg) and one from Sweden (Kristianstad) that are known to have been used in prehistoric, produce consistent and unique patterns in spectrograms. Heating experiments also demonstrate a consistency of results thus allowing to identify the origin of the outcrops regardless visual changes in appearance. The presentation also considers the significance of intentional burning of flint.
the hope to further clarify this theory and provide empirical data to macroscopic generalisation. It therefore employs an artefact
centric model first testing multiple assemblies from the site using portable x-ray fluorescence. This process will likely begin to
providing insights that can be supported by further targeted minimally destructive testing, such as LA-ICP-MS to
achieve a more finite, quantitative perspective looking for geochemical trends within the sequence. Overall there are some
clear and obvious issues with sourcing flint in general (e.g. internal variation, high silica percentage) and particularly within this context
where we have no access to the suspected primary deposit. However the potential to realise information about this sustained and
varied Neanderthal occupation and sheer quantity of flint artefacts available to study outweighs preliminary negatives and
the future of this project will be to further adapt a methodology aimed to shed light on Neanderthal behaviour through their flint
acquisition strategies.

This presentation refers to the lithic raw material exploitations in the eastern part of Polish Carpathians. The surface surveys and
LIDAR analysis carried out in 2013-2016 on this area resulted in discovery of new resources of various lithic raw material
used in the prehistoric: siliceous sandstones, quartzite, siliceous marls, marne hornstones, fysch raddiate, Briza-like flints,
light-brown tabular hornstone. As suggested from artefacts found on the sites in Poland and Slovakia in various chronological contexts these lithics were exploited both for local and much wider use. Identification of raw material itself as well as the outliers of siliceous rocks is of crucial issue in the study on relations between prehistoric communities.
The purpose of our work is to present the primary macroscopic and petrographic characteristics of different variants of
siliceous sandstones, quartzite, siliceous marls, hornstones, fysch raddiate and flints from the Eastern Carpathians as well as
their natural sources. We point at distinctive features of macroscopicity similar or almost identical raw materials that allow to
discern stone artefacts and suggest their source area.

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**TH5-01 Abstract 07**

**Erratic Flints from Poland. Preliminary results of petrographic and geochemical analyses**

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**Keywords:** erratic flint, geochemical analysis, petrologic analysis

**Presentation Preference:** Oral

Archaeological sites in Poland, and elsewhere in Western Europe, document that flint and chert have a long history of use. The most commonly knapped raw materials throughout the Stone Age and Early Bronze Age, flints from a number of different sources were used for making tools and weapons, fire-lighting tools, etc. When studying prehistoric flint, one of the more interesting issues to be examined is the connection between deposits exploited at the time and the tools recorded at archaeological sites. By following the spread and distribution of particular raw materials we can study the spreading of prehistoric communities, their mobility and mutual contacts, as well as the size and quality of exchange networks. At the same time, those features which caused siliceous rocks to be highly prized by ancient communities also mean that it is possible to detect and locate deposits of concrete artefacts found at an archaeological site. That is why researchers try to describe the diagnostic features of siliceous rocks using various petrographic and geochemical methods.

The area of the Wistula basin is rich in siliceous rocks and it contains deposits of several varieties of flint. A ‘chocolate’, grey white-spotted and striped (banded) variety, Volhynian flint on its eastern borders and erratic flint, occurring mostly in secondary deposits, were all widely used in prehistoric times. Almost all types of them have been examined by using both macroscopic and petrographic-geochemical methods to define their diagnostic features. The aim of the paper is to present the preliminary results of petrographic and geochemical analyses of erratic flint found throughout present-day Poland. Three different methods have been applied: electron probe micro analysis (EPMA), scanning electron microscope (SEM) and energy-dispersive x-ray fluorescence (EDXRF) spectrometry. The results of the EPMA and SEM analyses of erratic flint have revealed a largely homogeneous mineral composition, which suggests that mineral composition will be of limited utility in distinguishing erratic flint. However, EDXRF analysis of a small sample of erratic flint has identified differences in calcium (Ca) and iron (Fe) content between and among samples of erratic and ‘chocolate’ flint but a much larger sample of erratic flint specimens needs to be analysed to determine the range of chemical composition they contain.

Acknowledgements: The investigations were funded by the National Science Centre in Poland (PRELUDIUM 2; UMO-2011/03/N/HS1/03973).

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**TH5-01 Abstract 09**

**Flint studies for applications in archaeology – procedures and investigation sequence**

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**Co-author(s):** Segths, Valdis, University of Latvia, Riga, Latvia

**Keywords:** flint and chert, research procedures, stone tools

**Presentation Preference:** Oral

During the Paleoolithic flint and chert besides other stone materials were widely used for making tools. Because of numerous finds, flint becomes one of the most important information sources regarding prehistoric society for evaluation of ancient skills, knowledge and innovations. Therefore needs for well-developed typology of tools and updated laboratory methods for raw material identification and characterization can be recognized.

Mentioned above leads to evaluation and future development of tools grouping and classification still visually based to be supplemented or replaced by tools morphometric analyses and numeric data analysis depending on research directions. In this respect specialized data coming from artsits morphometric analysis can be used also for identification and characterization of used raw material, pointing, for example, to quality of the material for making tools, processing possibilities and traces of weathering. Current laboratory testing methods are well developed and available in most of the research centers and institutes, however, only few data collected during morphological studies can be applied in traditional archaeological studies. Most of reasons are related to limitations to use destructive methods, needs for pretreatment, size of sample, specific qualifications etc., but still the main complications are coming from natural diversity of stone material and complications to obtain comparable analytical data.

In the study geological samples of flint and chert from sites in Northern Europe as well as archaeological samples collected during Institute of Latvian History excavations in the Stocnec Neolithic settlement and Lapini Mesolithic settlement were included. The research procedure was developed for obtaining comparable analytical data. In the study macroscopic and microscopic assessments in visible and ultraviolet light were carried out, and for chemical composition detection the X-ray fluorescence spectrometry (XRF) method was used.

Our studies demonstrate needs for certain procedure and conditions to obtain analytical data which satisfy regional flint tools studies regarding source material localization and tracing the transportation routes.

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**TH5-01 Abstract 10**

**Cultural contacts during the late Boreal and early Atlantic by the Baltic coast of Sweden**

**Author:** Karlquist, Mathilda, National Historical Museums, Sweden, Lund, Sweden (Presenting author)

**Presentation Preference:** Oral

What were the directions of the social and cultural routes of contact, during the late Boreal and early Atlantic in Southern Scandinavia? This study is based on technological traditions in bone and lithic material, and strontium analyses from human teeth. The main material comes from Norje Sumanansur, a well preserved settlement covered by Littorina glyttia, excavated in 2011. The site lies by the outlet of a former lake, 2 km from the Baltic coast in Southeastern Sweden. It is among the first coastal settlements in Scandinavia. The settlement has been inhabited repeatedly during most of the year, and the finds are extensive, including both a varified lithic material and bone material 14C dated to ca. 7600–8600 cal. BC. The choice of lithic raw material – mainly Kristianstad flint, Senonian flint and quartzite – suggests connections in both northbound and southbound directions. Some characteristics of the lithic blade technology and the bone technology also suggest a connection with traditions from the east side of the Baltic, while bone ornaments and Ewberg triangles show some similarities with the Maglemosian tradition. The results from strontium analyses of 12 human teeth strengthens the picture of connections between people from different geographic areas.

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The rise and development of brick production in Vilnius, the capital of the former Grand Duchy of Lithuania, was inspired as strategically important craft. The production of bricks has been changing and improving during more than seven centuries. Therefore brick is an important source providing the knowledge about the technical development, production potential and cultural influence during different periods. The evaluation of physical and chemical properties of bricks would enable us to judge about the technological standards of Vilnius bricks, deviations from them and their reasons. The promising investigation methods of the old bricks are related to applied methods of exact sciences. One of them is geochemical method. The geochemical data statistically grouped using Ward’s hierarchical clustering (Barcevičius, Telšiūnas, 2015, Archéologia Lituanica, v.16, p.45-62) enables to hypothesise that: a) in certain chronological periods the material for construction of buildings and production of bricks could be extracted from the same or adjacent clay deposits in mineral composition; b) there exist brick production technologies specific for that period. So, it is possible to try to create peculiar “multivariate recalibration matrices” with as many as possible dated or characterised by other parameters samples. According to them it would be possible to determine at least approximate date of the newly found interesting brick of unknown chronology or to compare other features.

Geochronological investigations are understood as a complex of methods which includes: a) purposeful selection of brick fragment samples; b) multi-elemental method of determination of real total contents of elements, c) multivariate statistical analysis (cluster, factor analysis), d) analysis of the ratios of geochemical indices, e) graphical representation of data. Energy-dispersive X-ray fluorescence is usually used for investigation of chemical composition. Its advantage is that great number of chemical elements which can be determined including those related to clay minerals and their additives (Al, Ca, Fe, Mg, Na, K, Si, Ti) accompanied by specific trace elements (Ca, Co, Cr, Cu, Mn, Nb, Ni, Rb, Sr, Sr, P, Br, Zr, Pb, etc.).

Aiming to obtain more precise interpretation of brick origin and technological processes using geochemical methods it would be useful: a) to take more (≥5) sub-samples from the same brick (avoiding the effect of random sample selection), b) to take samples from the inner part of the brick (excluding anthropogeno-chemical component), c) to use multivariate analysis method with obligatory determination of total content of main major chemical elements and their specific satellites, d) to compile geochemical database of as many as possible exactly dated bricks (when a, b and c requirements are met), e) to select the set of chemical elements for multivariate analysis basing on various geochemical features (not only variability of composition); f) to verify and supplement the results of cluster analysis with the help of other multivariate statistical methods; g) to accumulate geochemical data on potential raw material (clay) deposits.

**TH5-01 Abstract 11**

**Possibilities to interpret of Vilnius old wall bricks using geochemical research method**

**Author:** Barcevičius, Saulius, Lithuanian Institute of Archaeology, Vilnius, Lithuania (Presenting author)

**Co-author(s):** Telšiūnas, Rūta, Nature Research Centre, Vilnius, Lithuania

**Keywords:** brick, geochemical, Vilnius

**Presentation Preference - Poster**

Site Zamostje 2 is situated in the northern part of the Moscow district on the Duna River (Russia). The site has yielded cultural layers of the late Mesolithic and early Neolithic with pottery and dated to the time between the beginning of the 7th to the middle of the 6th millennium BC. The first tools which were found inside the Mesolithic-Early Neolithic cultural horizons have many common features. Mainly the same flint sources were used for them. Micromorphology of flint samples including the composition and structure of flint was examined by means of thin-section analysis. Thin sections were investigated at low magnification between x10 and x100, as higher magnifications observe individual features, which may not be helpful for structural interpretation. Using both plane- and cross-polarised light highlights the textural and structural characteristics of the sample. The microstructural, mineralogical and micropaleontological characteristics allow to divide several flint types and suggest their geological age. The most common is the stone tools for which was used the Carbon flint. There are several samples of Jurassic and Cretaceous ages. Carbon flint was found in the site as pieces of rounded pebbles. The outcrops of flint sources in this region are covered by Quaternary deposits. The Quaternary deposits in this area are presented by the Upper-Volgian outwash alluvial lowland with the depth of about 100 m. Lowland transits to Kirolovo-Dmitrov moraine-erosion ridge. We suppose that the main raw sources are the alluvial and moraine deposits of Quaternary age. It is possible also that some samples from flint of Cretaceous age were import items.

**TH5-01 Abstract 12**

**Micromorphology of flint from Mesolithic–Early Neolithic site Zamostje 2 via thin-section analysis**

**Author:** Kuklova, Marianna, Herzen State University, St. Petersburg, Russian Federation (Presenting author)

**Co-author(s):** Lazovskaya, Olga, Institute for the History of Material Culture, St. Petersburg, Russian Federation

**Keywords:** Mesolithic, Early Neolithic, petrography of flint, raw materials, Zamostje 2 site

**Presentation Preference - Poster**

Micro- and mesoscopic observations allowed to identify some diagnostic characteristics between different mining sites while selective analysis (e.g. petrography and electron probe microanalysis) has refined our understanding of flint sourcing and diagnostic processes in the Mons Basin. Furthermore, a pilot study on laser-induced breakdown spectroscopy (LIBS) contribution to flint characterization is currently being conducted.

**TH5-01 Abstract 13**

**Contribution to the flint characterization from the Mons Basin (Belgium). New data for mining sites**

**Author:** PhD student Collin, Jean-Philippe, Univ. of Namur / Univ. of Paris 1, Namur, Belgium (Presenting author)

**Co-author(s):** Baille, Jean-Marc, University of Mons, Mons, Belgium

**Keywords:** mining sites, Mons Basin, raw material sourcing

**Presentation Preference - Poster**

Macro-, meso- and microscopy contribution to the cretaceous flint characterization from the Mons Basin (Belgium). New data for Neolithic mining sites

**The Mons Basin (Province of Hainaut, western Belgium) is a geologically rich region, particularly from the point of view of Upper Cretaceous sedimentary deposits, conducive to an important flint extraction activity during Prehistory.**

**Focusing on the Neolithic period, indications of flint procurement as early as the end of the 6th millennium have been recorded, but there are concrete evidences of mining sites in the region since the 5th millennium. Flint extraction activities have lasted at least until the second half of the 3rd millennium. Among those sites, the most notable are Spiennes, Flénu and Douvrain. At a time when research on flint mines emphasizes on the geographical distribution of their end products, the key - but also the main issue - is still the characterization of raw materials. Concerning the Mons Basin, the exploitation of the same deposits (from Campanian and Turonian ages) in a relative proximity led us to combine methods.**

**Macro- and mesoscopic observations allowed to identify some diagnostic characteristics between different mining sites while selective analysis (e.g. petrography and electron probe microanalysis) has refined our understanding of flint sourcing and diagnostic processes in the Mons Basin.**

**Furthermore, a pilot study on laser-induced breakdown spectroscopy (LIBS) contribution to flint characterization is currently being conducted.**
UNRAVELLING THE FORMATION PROCESSES OF THE ARCHAEOLOGICAL RECORD BY INTEGRATING ENVIRONMENTAL ARCHAEOLOGY AND TRADITIONAL FIELD EXCAVATION

Saturday, 3 September 2016, 09:00-18:30
Faculty of Philology, Room 92
Author: Romanieva, Barbara, University of Reading, Reading, United Kingdom (Presenting author)
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Co-author(s): Dr. Orton, David, University of York, York, United Kingdom
Co-author(s): Dr. Reilly, Eileen, University College Dublin, Dublin, Ireland
Co-author(s): McFadlan, Hayley, University of York, York, United Kingdom
Keywords: Environmental archaeology, Site formation processes, Taphonomy
Presentation Preference: Regular session

In 1987 Michael Schiffer published the hugely influential ‘Formation Processes of the Archaeological Record’, which has continued to be consulted to interpret the biographies of archaeological materials, the formation of relics and refuse assemblages, the spatial and diachronic development of archaeological sites, and to study sites in the context of their hinterlands. On the approach to the 30th anniversary of Schiffer’s publication, this session aims to examine the contribution that environmental archaeology, and its associated specialisms such as archaeozoology, geoarchaeology, palaeoentomology, palynology, and zooarchaeology, has made to advance our interpretations of formation processes on archaeological sites. We welcome submissions from all specialisms of environmental archaeology, as well as from archaeologists in other fields, particularly those who apply integrated approaches and/or experimentation to understand the taphonomy of data assemblages, the formation and reworking of stratigraphy, and the diagenetic processes that affect archaeological materials within their depositional context.

TH5-02 Abstract 01
A multi-disciplinary approach to formation and abandonment processes within later prehistoric houses
Author: Dr. Romanieva, Tanja, University of Edinburgh, Edinburgh, United Kingdom (Presenting author)
Co-author(s): Dr. Hunter, Fraser, National Museums Scotland, Edinburgh, United Kingdom
Keywords: Abandonment processes, Architectural analysis, Prehistoric building materials
Presentation Preference: Oral

From the Bronze Age to the late Iron Age people in Britain lived in roundhouses. They generally kept them clean which created wear, brush and cut patterns on the soft lowland soils. Later truncation left little remains behind apart from low but highly fragmented artefacts, the fills of negative features such as pits and postholes which can contain deliberate structured deposits, and the sediments trapped in the use-wear depressions. The material recovered from these hollows or the top fills of features is often ignored as representing redeposited material that can yield little securely stratified information. These deposits are either midden-rich, some showing a degree of lensing, or represent a bulk of homogenised but often artefactually sterile infill.

This paper is interested not only in the formation of these but also in the nature of their infills and the research potential of such redeposited ‘rubbish’. The multi-disciplinary approach based on recent excavations in Scotland uses micro-morphology, architectural analysis of structure and building materials and experimental reconstructions from Britain and beyond. Results suggest that the accumulated infills in the worn hollows are unlikely to be contemporary with the final house occupation, but represent post-abandonment processes not linked to the particular structure, but to wider site activities. The homogeneous bulk of material infill represents the remains of the houses’ superstructures and is studied at macro- and micro-levels to identify their organic building materials such as timber, turf and earth which are usually assumed to be “lost”. Interpretations working with such redeposited material move away from trying to understand each structure on a site individually and towards studying these within a model that postulates a cyclical site use, in which individual features and materials change function and substance because they are interlinked in larger economic and cultural processes.

TH5-02 Abstract 02
Interpreting silos deposits in medieval Mediterranean France: archaeo-botanical approach
Author: Dr. Ros, Jerome, UMR7209, CNR/INRAP, Paris, France (Presenting author)
Co-author(s): Dr. Vaquehali, Christophe, UMR 5554 (CNRS); UMR7298 LAM2 (CNRS), Montpellier, France
Keywords: archaeobotany, medieval Mediterranean France, silos
Presentation Preference: Oral

For the last twenty years, large-scale public works have helped to improve medieval archaeological research in Mediterranean southern France. The multiplicity of rescue excavations has led to the discovery of several large enfilading areas, some of them formed by thousands of silos. The discovery of such structures systematically raises the archaeologists the issue of the identification of the type of deposits excavated (in primary or secondary position), and, for primary deposits, the question of the type of products analysed.

The discovery of storage in primary position remained uncommon and was, so far, poorly documented by archaeobotany in this area. New archaeo-botanical investigations on several sites in Languedoc-Roussillon allows us to present a review of the results on storage practices in this region, and a discussion on the methods by which archaeobotany can enlighten the existence of primary deposits in enfilading areas. In a second time, we will discuss the interest of studying deposits in secondary position to document several questions, such as the identification of other agricultural practices not related to the storage itself, or the reconstitution of past environment exploited.

TH5-02 Abstract 03
Exploring house (after)lives at Catalhöyük West via microstratigraphy and animal bone taphonomy
Author: Dr. Orton, David, University of York, York, United Kingdom
Co-author(s): Rogash, Jana, Flinders University of South Australia, Adelaide, Australia (Presenting author)
Keywords: Bone taphonomy, Formation processes, Microstratigraphy
Presentation Preference: Oral

This paper presents recent work on the Catalhöyük West Mound (Turkey, ca. 5900-5800 BC), combining microstratigraphy and animal bone taphonomy to explore the use lives of buildings. Research on architectural stratigraphy and particularly on formation processes of infill deposits has demonstrated that buildings underwent several phases of use, abandonment and modification, and that at various stages of their lives they were used for different activities and purposes that included storage, refuse disposal and burial. While stratigraphy provides a relative sequence of events, animal bone taphonomy provides data on the nature and rate of deposit formation processes, allowing us to begin to approach the duration of each stage in the buildings’ lives. These observations can be linked with interpretations of social processes during a phase of Anatolian prehistory that saw societies transform to become more mobile, fluid, and competitive.

TH5-02 Abstract 04
When someone walked in these buildings (geoarchaeology of soils)
Author: Cammas, Cecilia, INRAP, Paris, France (Presenting author)
Co-author(s): Grousset, Marie, INRAP, Montigny-le-Bretonneux, France
Co-author(s): Marcy, T., INRAP, Croix-Molène, France
Keywords: Geoarchaeology, Huts, Middle Ages
Presentation Preference: Oral

The Medieval period was documented for a long time by texts and iconography. These studies brought numerous testimonies which tended to present the living conditions of the noble persons and the clerks. For more than 30 years, in France, the archaeological research has totally changed this incomplete vision of the period. So, the development of the preventive archaeology, and more particularly on huge excavations called in French ‘Grands Travaux’ lighted numerous data and artefacts of the beginning of the medieval period.

The national institute Inrap which was in charge of many of these projects, operated numerous related disciplines of the archaeology such as geoarchaeology, archaeozoology, archaeobotany. It was in particular possible to make experiments, such as they were able to be put forward in particular on plan of the Channel relaying the river Saine and the North of Europe (code CSNIE). The poster presented here shows the results which were obtained on the same excavation fields of the North of France within the framework of a micromorphological study of the Early Medieval stuff. We especially focused on huts called ‘sunken featured buildings’. It was set up that a particular strategy of sampling, which aims at taking into account the allowed time, as well as the average scientists and the available human being. All the archaeological units of this type having been searched and
taken, it was set up an index form of statement taking into account paleo-environmental comments and studies. It is to find easily samples with the aim of the study in laboratory. Every sample was coded and inventoried. A ceaseless round trip between field data (sediments and drawings/photos) and the data obtained in the microarchaeological study, as well as the overall of the other disciplines allowed to document very finely structures which seemed in prior homogeneous.

So, the studies led by the archaeologists during works of preventive archaeology allow to set up real scientific protocols. The FBIs, structures in prior without notable interest, give a lot of information on the everyday life of the populations of the beginning of the Middle Ages in the North of France. Thanks to the interdisciplinary studies led everywhere, it is today possible to have a more just vision of the activities of populations we discover in archaeological field.

Cesspits and the P-P-P-P-problem: Archaeobotany as a tool to access site formation processes

TH5-02 Abstract 05

Cesspits and the P-P-P-P-problem: Archaeobotany as a tool to access site formation processes

TH5-02 Abstract 06

Reinterpreting pits and post-holes: Archaeobotany as a tool to access site formation processes

TH5-02 Abstract 07

Pit-filling processes at the Bronze Age site of Monte das Cabanas (Northwest Iberia)
Although an important habitat for human societies, the study of archaeological site formation in tropical forests has been less analyzed due to the presence of various sediment types. The interplay between lake and deltaic deposits, which overlap with anthropogenic settlement areas, shows significant differences between the different types of structures regarding the activity areas around them. These areas were not detected in the field situation but are due to the analyses. The radiocarbon datings show that the site was occupied temporarily.

The site was situated at a measured distance from the nearest known settlement. Our interpretation is that the site was an activity area and that it during at least three phases has been used for processing grain. It seems possible to compare this with historically known roasting activities. These were also performed separately from the settlements. It is an activity that is often associated with women, but the place was also known as a gathering point for others in the society.

By focusing more thoroughly on one type of structure we have been able to gain more understanding for it. We have also been able to discuss social organisation and democracy and thereby questions of interest for our society. The excavation is in itself an example of how to see democratically on different types of structures and sites.

TH5-02 Abstract 09
Transdisciplinary results of site formation processes in the wetland site Zug-Riedmatt (Switzerland)

Author - PhD Ismail-Meyer, Kristin, Integrative Prehistory and Archaeological Science, Basel, Switzerland (Presenting author)
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Presentation Preference - Oral

At Zug-Riedmatt, excellently preserved waterlogged organic layers were conserved in a depth of 6 m, below the late glacial deposits of the river Lorze into Lake Zug. The layers have been accumulated within the Neolithic settlement activities between 3200 and 3100 cal BC. Even though only a small part of the site was excavated, an exceedingly dense recovery technique was used, ensuring that the site could be investigated in detail. Using a micromorphological methodological approach, 79 profile columns were documented, sampled and separated into layers in an intensive cooperation between archaeobotany, palynology, micromorphology, archaeozoology, geochemistry and field archaeology.

All disciplines involved simultaneously analysed the same samples and actively exchanged their results, experiences and ideas. The aim is to understand layer formation and degradation processes from different perspectives with a focus on taphonomic questions. Our talk provides an insight into the transdisciplinary discussion of three profile columns regarding archaeobotany, palynology and micromorphology. The three profile columns cover the whole occupation layer of up to 1.3 m of thickness, which contains various sediment types. The interplay between lake and deltaic deposits, which overlap with anthropogenic settlement activities, shall be presented. This micromorphological approach shows that complex, hard to solve questions emerge, which have to be discussed in detail between the involved disciplines.

TH5-02 Abstract 10
Formation processes related to foragers in tropical forests

Author - Dr. Friesem, David, University of Cambridge, Cambridge, United Kingdom (Presenting author)
Keywords: Foragers, Formation Processes, Tropical Forests

Presentation Preference - Oral

Although an important habitat for human societies, the study of archaeological site formation in tropical forests has been less studied compared to temperate and arid environments. Nonetheless, in addition to environmental factors, human behavior plays a significant role in the formation of the archaeological record. This paper focuses on the study of archaeological site formation processes related to forager ways of living in a tropical forest environment. It presents a geo-archaeological case study from South India where an integrated approach involved long-term ethnography, field excavation and geoarchaeological laboratory-based analyses. The integrated approach enabled to associate social and cultural aspects of forager ways of living - such as mobility and immediacy - with patterns of use of apaca and material deposition. Field excavation and sediment sampling from recently abandoned sites of the same group, allowed the investigation of post-depositional processes at both the visible and invisible (micro-analytical) scales of the archaeological record. The geoaarchaeological analyses included petrographic analysis and taphonomic and phyto lith analysis and soil micromorphology. The results of the geoaarchaeological analyses exhibit the environmental post-depositional processes occurring in tropical forests, mainly characterized by acidic conditions and intensive biological activity. Overall, although forager ways of living and the environmental conditions in tropical forests challenge the formation of a well-preserved archaeological evidence, an integrated approach examining the different scales of the archaeological record can successfully reconstruct human behavior and the formation processes of archaeological sites.
TH5-02 Abstract 13
Unravelling the formation process: re-excavating stratigraphy beneath the temples of Malta

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Keywords: Anthracology, Radiocarbon dating, SE Poland

Presentation Preference - Oral

In this paper we will explore the depositional, post-depositional and current land use processes that have resulted in the present situation and the expression of the surface site as recorded in the archaeological field survey. We will show how the integration of geo-archaeological and geophysical work has provided us with a completely different view of the formation of sites like RB73, and of types of landscape exploitation in these Apennine upland valleys.

TH5-02 Abstract 14
Interdisciplinary research for unravelling the chronology of archaeological sites of Ułów (Poland)

Author - Dr. Moskal-del Hoyo, Magdalena, W. Szafer Institute of Botany, Polish Academy of Sciences, Krakow, Poland (Presenting author)
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Keywords: Anthropology, Radiocarbon dating, SE Poland

Presentation Preference - Oral

A group of archaeological sites located near the village of Ułów in Central Rzeczno (Lublin voivodeship, south-eastern Poland) was discovered by people using metal detectors when searching for military items from World War II. The first archaeological survey was carried out in 2001 and proved that an extensive forested area, considered as unexplored in prehistory, contained remains of multicultural settlements. The systematic excavation works began in 2002 and have been intensiﬁed since 2014, when a research project entitled “Rzeczno – the ancient terra incognita” (Settlement micro-region in the area of Ułów in Middle Rzeczno in the prehistory and its background. Interdisciplinary studies) obtained financial support from the National Science Centre in Poland. The main topic of the research is the construction of processes behind prehistoric settlements in this area based on interdisciplinary investigations, including archaeological, anthropological, geomorphological, and archaeobotanical research, among others. In this area, the archaeological site 3 is especially interesting when taphonomic problems are considered. It was largely investigated and showed evidences of long-term occupation since the Late Neolithic and Mesolithic until the Middle Ages. However, the majority of archaeological features belong to the Late Neolithic Corded Ware culture and a cemetery of the Roman period. The stratigraphic sequence of the Late Neolithic Corded Ware culture and the cemetery of the Roman period Weltbar culture. The taphonomic problems were initially revealed by anthracological studies, which documented a large variety of woody taxa and indicated preferences in their use in specific types of archaeological features. A group of selected charcoal samples were used for radiocarbon dating, especially those coming from various types of archaeological features and those that differed taxonomically. The results showed that a group of features with evidences of burning activities and with a small amount of archaeological material, which previously were interpreted as funeral pyres belonging to the Roman period cemetery, turned out to be of Late Neolithic origin. Another problem in this cemetery was the discrepancy between dating results of wood charcoal and well-dated objects related to the relative chronology that were found in the same graves. Also, radiocarbon dating indicated a much greater intensity of settlement dated to the early and late stages of the Middle Ages, which was not inferred associated by singular archaeological findings. Moreover, the archaeological analysis of burrows dated to the Corded Ware culture, complemented by radiocarbon dating, demonstrated taxonomical and chronological differences between original burials and areas that were disturbed in later periods. The results from the current study show that a full reconstruction of the different phases of prehistoric cultural settlement is only possible by the implementation of a complementary and interdisciplinary research program, involving different disciplines such as archaeology, archaeobotany, and paleoenvironmental reconstruction.
Exceptional discovery was made in the stratigraphically older layer of calcareous clay, where unusual pottery was located. Radiocarbon dates of the organic tap from pottery correspond with the end of 7th and beginning of 6th millennium BC. The pottery is dated by different methods. The composition of inorganic pottery matrix is not of local origin and points out that the sources of the raw material originated from the southern foothills of Stavne mountains. The pottery is tempered with grass stems and leaves. Changes of the organic matter in pottery matrix show a very low firing temperature.

The uniqueness of the site lies in the stratified sedimentary sequence containing the Early Neolithic artifacts in limnic environment, which preserved material that would be otherwise irretrievably lost.

TH5-02 Abstract 17
Regional correlations of destruction layers using Earth’s magnetic field: The Levant case study

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Keywords: Destruction layers, Paleomagnetism, Stratigraphic correlation

presentation preference - Oral

The temporal variations in Earth’s magnetic field have been recorded in fired artifacts and can provide independent tests for radiocarbon and typology. Cooking installations used continuously before particular calamities in different sites should show similar magnetization directions. If their constituent ferromagnetic minerals are appropriate for the method, the magnetization direction is measured with respect to the geographic north (declination) and the horizon (inclination). Correlation can be tested by inclination, declination, or both. We test correlations between ovens sampled in-situ within individual destruction layers at the Middle Bronze II-A site of Southern Israel (18th-19th centuries BCE). During parts of this time, radiocarbon calibration severely limits temporal resolution of absolute dating. By contrast, the magnetic field in the Levant shows extreme fluctuations. The data supports the overall stratigraphic picture and demonstrate the potential of future studies to resolve some of the uncertainties and discrepancies between alternative chronologies.

TH5-02 Abstract 18
Applying silence and sound to environmental reconstruction: frameworks, applications, implications

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Keywords: archaeoacoustics, methodology, sounds, soundscapes
presentation preference - Oral

Culture and the Environment are noisy. The formation of sites within their environments is never quite. However, the past is silent. It was not until the nineteenth century that one could hear sounds from the past. Admittedly, language-notation began about five millennia ago and music-notation about a millennia and a half. But, even that is recent for human existence. Notations depict sound, but are not the sounds themselves.

In 1973 Thomas Edison invented the phonograph, later to be developed into various sound recording technologies. Only then, did the sounds of the past become available to the present. We can listen to words spoken and music played long ago. But can we hear the sounds of prehistory? No, but to some extent we can reconstruct them, and at least record and measure the present soundscapes of archaeological sites and their environments. Such recordings can give us relevant clues about earlier soundscapes as well as helping us understand how sounds were part of the prehistoric environment and the formation processes of site creation. Thus, we believe we can add further information about the location and cultural (sound-producing) activities of earlier times. When combined and integrated, these pieces of information from various sources can help us to build reasonable valid descriptions, interpretations, and even reconstructions, of past soundscapes.

Blake & Cross (Current Anthropology, 2015) proposed a framework for systematic sound-recordings that is objective, comprehensive and multidisciplinary in orientation. Their framework implies considerations regarding human auditory systems, human uses and environmental effects of sounds, sounds’ impact for social behaviour, ethological considerations of sounds, sound-making tools, natural soundscapes; and ethnoacoustic generalities as well as particular cultural examples.

TH5-02 Abstract 20
Deciphering formation processes of the urban Dark Earth: a geoarchaeological approach

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Keywords: Dark Earth, Phyto lith study, Soil Micromorphology
presentation preference - Oral

Urban dark earths are dark coloured, poorly stratified units, often formed over several centuries that have been uncovered in many European towns (Nicosia & Devos, 2014). Due to their lack of any recognizable internal stratigraphy, standard archaeological approaches typically fail to understand their complex histories.

The present contribution will demonstrate how geoarchaeological approaches, and especially micromorphology, can help to understand the often complex formation processes, and to discriminate different human activities and natural processes involved in dark earth formation. In a step forward, we will mainly focus on the morphological study of botanical components, observed within the dark earth; we will hereby focus on the example of the phytoliths (Devo et al., 2013; Vrydaghs et al., in press).

References:
TH5-02 Abstract 21

Plant macroremains as proxies to understand formation processes in lakeshore settlements

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Keywords: archaeological preservation parameters, wetland archaeology

Presentation Preference - Oral

Anthropogenic modifications in wetland sites are mainly characterized by the presence of archaeological artifacts and clusters of organic remains resulting from the dumping of food or other useful plant remains (incl. cultivars), accumulations of dung and other organic debris like leftovers of building activities. How formation processes affect the preservation of these remains and the degree of representativeness of the resulting data is still largely unknown.

A recently excavated Late Neolithic settlement phase at the site of Parkhaus Opera (Lake Zürich, Switzerland) offered the unique opportunity of sampling a well-preserved waterlogged layer that spread over 3000 m². A systematic sampling strategy was conducted and an ambitious project funded by the SNF (Swiss National Science Foundation) was organized in order to approach several methodological and research issues, among which was the identification of relevant parameters in archaeological remains to characterize layer taphonomy. Uncharred plant remains are amongst the most fragile remains in such sediments and therefore ideal candidates for answering taphonomic questions. Based on previously published research and own experience we have defined around 70 variables (which included not only plant remains but also remains of diverse origin which appeared in archaeobotanical samples) which are considered to be indicators of preservation conditions. These variables were described for ca. 250 large-volume samples (ca. 5 L) and ca. 120 small-volume samples (ca. 0.3 L). We developed specific quantification criteria that can be applied in a rapid yet informative way. The data were evaluated on the basis of ubiquity, and through qualitative evaluations of the spatial distribution of the variables (with GIS maps). The results seem to allow a clear distinction between well-preserved parts of the layer and eroded parts of the layer, including parts that were eroded in connection to lake influence in opposition to other erosive processes. These results make us suggest that such evaluations should continue to take place in the future if proper palaeoecological evaluations of archaeobotanical remains are to be done.

TH5-02 Abstract 22

Unravelling Formation Processes Associated with Destruction by Fire

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Keywords: Destruction by fire, Formation processes, Geoarchaeology

Presentation Preference - Oral

Destruction by fire is a well-known archaeological phenomenon around the world, including the Near East. It is common in many sites in Israel dating to the Iron Age (ca. 1150 to 600 BCE), and mostly associated with territorial conflict, as in conquest campaigns. A recent project is conducted at Tel Megido, a key Near Eastern archaeological site, in which a massive destruction event (Stratum VIA of the late Iron Age I) is studied using a geoarchaeological approach. Initial mineralogical analyses, using FTIR spectroscopy, indicated that mud bricks found at the destruction level are homogeneously heated to about 600°C. This observation posed the question whether the site was constructed with sun-dried or pre-fired mud bricks. A paleomagnetic study of five bricks found in an in-situ standing wall shows the same magnetic field directions, suggesting in situ burning, i.e., construction with sun-dried mud bricks. In order to understand the manner in which sun-dried mud bricks behave during a conflagration, we conducted several sets of laboratory-based experiments using model bricks fired under different temperature, duration and oxygen level conditions. The resultant fired model bricks were further tested for mineralogical changes under these various conditions, which are considered to be indicators of preservation conditions. These variables were described for ca. 250 large-volume samples (ca. 5 L) and ca. 120 small-volume samples (ca. 0.3 L). We developed specific quantification criteria that can be applied in a rapid yet informative way. The data were evaluated on the basis of ubiquity, and through qualitative evaluations of the spatial distribution of the variables (with GIS maps). The results seem to allow a clear distinction between well-preserved parts of the layer and eroded parts of the layer, including parts that were eroded in connection to lake influence in opposition to other erosive processes. These results make us suggest that such evaluations should continue to take place in the future if proper palaeoecological evaluations of archaeobotanical remains are to be done.

TH5-02 Abstract 23

Material culture and formation processes in archaeology

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Presentation Preference - Poster

The importance of formation processes in archaeology is unquestionable. They condition the stratigraphic circumstances of sites and are determining factors for understanding the phenomena of occupation, abandonment and post-abandonment of archaeological structures and sites. To know, for example, whether we are dealing with the level of use or destruction of a building is basic to be able to correctly reconstruct its biography, to determine its level of residuality or to establish its chronology.

We believe, however, that the study of the formation of the archaeological record has not been developed as it might have been, either theorectically or methodologically. In fact, we mostly work on the surface one by one, in a process in which material culture plays a fundamental role as a link between both. It is precisely this aspect, the relationship between stratification and objects, that we want to discuss in this poster.

Starting from the experience accumulated by our group in field excavation, this aims to characterise the main types of deposits that are recorded in an archaeological site, generating a reference framework that could be used as a hermeneutic tool in deciphering and understanding the archaeological record. For definition purposes, we will use 3 stages that are acknowledged in the lifecycle of any place (occupation, abandonment and post-abandonment), each of which comprises more different aggregation and reduction processes. Within the aggregation processes, we will pay special attention to pottery recovery in the archaeological context. In this respect, the manner in which artefacts are presented in the archaeological record constitutes one of the main instruments for identifying the depositional processes since these same processes contribute to the presence of pottery in a very different manner.
TH5-02 Abstract 25
EcoPlis: characterizing the prehistoric human occupations in the Lis River Basin (Portugal)

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Keywords: EcoPlis, Human occupation, Prehistory

Presentation Preference - Poster

The River Lis Basin, located in central Portugal, is an ecotone between the coast and the inland mountains. The unique conditions for highly preservation of both organic and inorganic materials make it a key region to acquire high-resolution data from both geological and archaeological contexts, fundamental for understanding features of hominin behaviour, such as mobility, site use, adaptive strategies and resource exploitation, namely from the highly productive coastal environment.

Besides hundreds of open-air sites, this basin also has hundreds of caves and rockshelters, many of them with sediments reaching their roofs and with clear evidence of human occupation. In those already tested it was possible to recognize well-preserved multi-occupational archaeological layers, several types of artefacts made in organic and inorganic materials and also human burials. In 2015, the EcoPlis research project was started with the goal of find and characterize, with the highest resolution possible, the complete sequence of the Middle and of the Upper Paleolithic occupations in the Western-most Iberia. Among other things, the project aims to contribute significantly for the understanding of the period between the demise of Neanderthals and their replacement by Modern Humans. In our first year, we found over 50 new caves and rockshelters with sediments, found artefacts dated from the Acheulean to the Chalcolithic and start the excavation of two cave and a rockshelter. Our approach includes the 3D piece-plottting of all visible finds without a cut-line, the complete flotation of the sediments from archaeological layers and samples for phytoliths and parasites. Among other things, we found multiple entrances with human remains in a same short valley and in a same cliff that may correspond to two Early Palaolithic mortuary complexes, a dense shell layer in a Palaolithic site located over 25 km from the present seashore and, thanks to our protocol, we could recognize fine lenses of deposition of the natural and archaeological remains in a same archaeological layer that will allow us to create detailed diachronic and synchronic snapshots of the human occupation and eco-dynamics of this region throughout its Palaolithic occupation.

TH5-02 Abstract 26
Palynological contribution for formation processes reconstruction in a Neolithic pile dwelling site

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Keywords: formation processes, La Draga, Palynology

Presentation Preference - Poster

The integration of pollen and non-pollen palynomorphs (NPP) analyses provides essential data to reconstruct palaeoenvironmental conditions in both regional and local scales. The application of these analyses in archaeological deposits also offers the possibility to obtain evidence of socioeconomic practices, in terms of documenting crops, gathered plants, stabilizing of flocks, etc. In addition, the integration of both archaeoecological proxies and the information from the archaeological excavation allows reconstructing the dynamics of formation of the archaeological record. In this work, a spatial analysis of pollen and NPP taxa has been carried out in order to obtain a better understanding about the formation of the several archaeological structures and sedimentary units of the site of La Draga (Sitroia, Spain), a pile dwelling site located in the shore of Lake Banyoles.
BIOGEOCHEMICAL APPROACHES TO ARCHAEOLOGICAL DIET, MOBILITY AND DISEASE

TH5-03 Abstract 01
Dietary Isotope and Paleopathology Reconstruction of the First Pastoralists from Cis-Baikal, Siberia

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Keywords: Diet, Pastoralist, Siberia

Presentation Preference - Oral

Nomadic pastoralists first arrived in the western region of Lake Baikal, Siberia, known as the Cis-Baikal, around 3000 years ago. Compared to early and later periods, the lifeways of these pastoralists, who brought with them domesticated animals including dogs, goats, and cattle, is poorly known. This research presents the first stable carbon and nitrogen isotope dietary reconstruction of Cis-Baikal pastoralists (n=55), with most sites and individuals (n=34) deriving from ~2950-2350 calBP, in the Butokhre mortuary tradition. Stable isotope data are also obtained from five pastoralist period faunal species (n=22; horse, sheep, goat, cow, deer). As well, every pastoralist skeleton is examined for paleopathological evidence of trauma, disease, and morphological alteration.

Isotopic results demonstrate that foragers utilized a mixed subsistence strategy, relying considerably on the Lake's many freshwater resources. In particular, Cis-Baikal pastoralists have stable nitrogen ratios from -11.0 to 18.0‰, which is two to three trophic levels higher than the domesticated fauna (mean = -4.0 to 5.0‰), with slightly lower δ15N values in individuals from later periods. Pastoralists from the Butokhre period have stable carbon values that are 2.0 to 4.0‰ lower than the domesticated fauna, which can be explained by consumption of freshwater resources. In some later period pastoralists δ13C values become even more negative, which, in conjunction with lower δ15N values, suggests the C4 plant millet may have been consumed either by people or their livestock. Yet, fish remained an important part of the pastoralist diet up to modern times.

Many of the skeletons were very incomplete, limiting paleopathological investigation. Of the most common pathological lesions are osteoarthritis of the spine and degenerative disc disease (n=9) and spondylolysis of the fifth lumbar vertebra (n=3). One older male had a healed tibia-fibula fracture and two individuals had genu valgum. In many of the cases, the upper limbs, especially the humer and ulna, were robust and had very pronounced muscle attachment sites. We propose this suite of pathological lesions and bony abnormalities are likely the result of a lifetime of high mobility and riding horses through the rough steppe environ of the Cis-Baikal. This research offers our new insights into the lifeways of Cis-Baikal's enigmatic pastoralists.

TH5-03 Abstract 02
Porotic hyperostosis and cribra orbitalia over the Neolithic transition in the Danube Gorges, Serbia

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Keywords: cribra orbitalia, Neolithic transition, porotic hyperostosis

Presentation Preference - Oral

The most commonly reported pathological lesions in archaeological collections are porotic hyperostosis on the cranial vault surface and cribra orbitalia on the orbital roofs, both macroscopically visible as constrained areas of pitting and porosity, and both being manifestations of diploë expansion. Hemolytic and megaloblastic anemia are the most likely causes of porotic hyperostosis, while other pathological processes (scurvy, rickets, hemangiomas and traumatic injuries) can also lead to orbital roof lesions.

Here we present results of a gross anatomical study of porotic hyperostosis and cribra orbitalia in a sample size of 113 individuals from four archaeological sites spanning the Neolithic to the Bronze Age in the Danube Gorges, Serbia (Vlasac, Lepenski Vir, Hajdukovac Vedernica and Padina, c. 9500 – 5500 BC). We also discuss the paleopathological implications of our findings in terms of previous isotopic studies of this material. Our results show a high prevalence of porotic hyperostosis (89%) and a low prevalence of cribra orbitalia (13%). No major change in prevalence of these lesions was observed through time. Isotopic studies indicate an overall consistency in dietary habits during all three phases at all four sites in the Danube Gorges. As there was no significant improvement in the quality of the diet, nor a change in living conditions, characterized by small, crowded settlements, this is considered supporting evidence that nutritional and sanitation factors are probable causes of porotic hyperostosis and cribra orbitalia in this region. Our findings have useful implications for other studies of chronic/episodic malnutrition and infectious disease spanning the Neolithic transition elsewhere.

TH5-03 Abstract 03
Dental paleopathology, diet and mobility at the Copper Age site of Marroquies Bajos (Jaén, Spain)

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Keywords: bioarcheology, Copper Age, Iberia, paleopathology, stable isotope analysis

Presentation Preference - Oral

Marroquies Bajos represents one of the largest Copper Age (c. 3200-2250 BC) mega-sites in Iberia and comprises a collection of numerous human remains. The site includes three areas of necropolises (N1, N2 and N4) where primary and secondary burials were documented. In this paper we explore dental paleopathology, dietary differences and mobility patterns throughout bioarchaeological and multi-isotopic methods (n~108). The evaluation of the health status showed no significant differences in the frequency of caries between the three areas of necropolises. However, at N2 there is a higher proportion of hypoplasia and at N4 of caries than the total sample. Stable isotopes of carbon δ13C and nitrogen δ15N in bone collagen showed different sources at N4 that at the other two mortuary areas. In addition, strontium isotope analysis 87Sr/86Sr and oxygen δ18O showed greater variability at N2 and N4 that at N1. This research aims to investigate social differences based on health status, access to resources and place of origin between the three funerary areas based on the combination of paleopathology and stable isotope analysis. We will discuss the correlation of diet and health along with the mobility patterns and the implications of these findings in the frame of the evolution of late prehistoric societies in the Iberian Peninsula.

TH5-03 Abstract 04
The influence of diet and mobility on health in the Neolithic transition in the southern Iberian Peninsula

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Keywords: diet, Neolithic transition, health

Presentation Preference - Oral

The influence of diet and mobility on health in the Neolithic transition in the southern Iberian Peninsula.

TH5-03 Abstract 05
The influence of diet and mobility on health in the Neolithic transition in the southern Iberian Peninsula

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Keywords: diet, Neolithic transition, health

Presentation Preference - Oral

The influence of diet and mobility on health in the Neolithic transition in the southern Iberian Peninsula.
Investigations of stable isotope ratios from human remains in relation to geographical regions, sex, age, grave goods and chronology allow statements about the living and environmental conditions in ancient times. Stable isotopes do not decay over time and are therefore ideal tracers in biological systems. Swiss skeletal series are of great importance for research on European populations of the Late Iron Age (450 to 15 BC). Written sources are scarce and bioanthropological-archaeological analyses provide direct information on individuals. Human remains (N = 164) from burial sites of different regions at the Swiss Plateau and the Swiss Alps were analysed. Collagen was extracted and stable carbon, nitrogen and sulphur isotopes were analysed. Additionally, published data from Münzingen (Moghaddam et al. 2016) were included for comparisons.

All data were analysed for sex, age, regional and chronological differences within and between the burial sites. Stable isotope data indicate an overall diet mainly based on animal protein and plants following the C3 photosynthetic pathway. Significant differences between the Swiss Plateau and the Swiss Alps were found with more positive 813C and 815N mean values observed for the Swiss Alps. Some individuals indicate a significant intake of C4-plants in the diet. Cultural and/or climatic changes as well as different geological conditions might have led to distinct patterns of crop cultivation and animal husbandry. No significant differences could be detected between males and females as shown for Münzingen. Regarding the age classes the 815N values follow an isotopic trend indicating a breastfeeding signal for infants. The 813D data suggest a more terrestrial based diet with minor consumption of freshwater fish. Differences in the 813D8S data might reflect different local 813D8S values with minor mobility in Late Iron Age populations.


TH5-03 Abstract 05
Dietary and social patterns in early medieval southwest Germany – a stable isotope approach

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Keywords: Diet, Early Medieval Society, Stable Isotopes
Presentation Preference - Oral

This presentation explores the social dynamics of food resources and the establishment of dietary differences in the early medieval Alamannia. Differential dietary patterns develop through various socio-cultural, economic and environmental factors and may be expressed in an unequal distribution of food resources or food preferences within a society or differential subsistence strategies between populations. The Alamannic row graves in southwest Germany present a substantial source to study these factors for a number of the 5th – 8th century AD with an allegedly ranked but somewhat fluid social system.

The analysis of stable carbon and nitrogen isotopes in bone collagen of adult human and faunal remains of row grave cemeteries (Fridingen a. d. Donau (N = 60), Kirchheim u. Teck (N = 62), Neresheim (N = 54)) and the separate necropolis of Metzingen (N = 10) is conducted in order to investigate the interaction of resources such as diet, socio-cultural and gender identities in the framework of the respective natural conditions. The comparison of dietary proxies, archaeological and environmental data reveals a pattern of divergent internal dietary structures between settlement sites, reflecting different strategies in more or less favorable locations in the Frankish Empire as well as chronological changes. Higher amounts of animal protein in the diet of individuals buried in exceptional places (e.g. burial mounds) in Fridingen a. d. Donau and Niederstotzingen indicate socio-cultural dynamics, where special treatment in death is connected to dietary distinction during lifetime.

TH5-03 Abstract 06
What ate and who were people buried in the early medieval chamber graves in Poland

Author - Dr. Blaszczyk, Darek, University of Warsaw, Warsaw, Poland (Presenting author)
Keywords: chamber graves, early Middle Ages, stable isotopes analyses, diet, provenance
Presentation Preference - Oral

The paper will present and discuss results of stable isotopes analysis of carbon and nitrogen for a diet as well as strontium and oxygen for a provenance from 6 inhumation cemeteries with chamber graves. This form of elite burials was constructed and used in early medieval Poland mostly during the second half of the 5th century and the 9th century, in the period of shaping of social divisions, forming of elites, creating of a state and a religion shift from paganism to Christianity. Chamber graves were characterized by having an inner wooden construction in a form of a chamber and were often furnished with numerous and luxurious grave goods.

Such burials were places of eternal rest for men, women and children. For the study of the diet and the provenance were examined samples of bone collagen and tooth enamel from individuals buried in chamber graves as well as samples from ordinary human graves and animal remains as a background. The obtained results suggest that individuals buried in chamber graves formed a heterogeneous group of people. Some of them seem to be of local origin and some were newcomers from different regions. Their diet, with some exceptions, did not vary much from the deceased internet in ordinary graves. However, the diet consumed by men and women buried together in double graves differed significantly.

TH5-03 Abstract 07
A paleopathological and isotopic approach to dietary changes in medieval Holland

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Keywords: dental caries, medieval Holland, stable isotopes
Presentation Preference - Oral

The late medieval period in Holland was characterised by substantial socioeconomic changes. While the region was largely undeveloped prior to AD 1200, after came large scale urbanisation and flourishing international trade, changes that would have impacted many aspects of life. This paper investigates the effect of these changes on diet by comparing skeletal collections from the central medieval village of Blokhuzen (AD 1000-1200) to the late medieval town of Akkemar (AD 1448-1572) using a combination of dental disease and stable isotope data.

The caries results clearly point to a dietary shift (213 individuals analysed). The urban population of Akkemar has a significantly higher caries frequency, which begins at a younger age, than the individuals from Blokhuzen, suggesting increased consumption of cariogenic products, such as sugars and starches. Significant dietary differences are also demonstrated by the stable isotope data (sample of 50 individuals analysed). The population of Akkemar showed significantly enriched 815N ratios and had more variable 813C ratios than the population from Blokhuzen. This may be due to increased consumption of freshwater or marine fish by the people of Akkemar. Alternatively, the consumption of animals/animal products of a high trophic level such as chicken, eggs, and pigs could have contributed to enriched 815N ratios.

A difference in the patterning of caries and isotopic data in males versus females between the two populations also demonstrates a dietary shift. In rural Blokhuzen, there was a significant difference between males and females in regards to caries frequency but not stable isotope values. This likely reflects the universal biophysiological phenomenon of higher caries frequencies in women. In urban Akkemar, there was no significant difference in male-female caries frequencies, suggesting the diet changed in such a way that the expected difference was eliminated. The males were eating a certain type of food that was rarer in the female diet, that did not shift their 815C ratios away from that of the females, but elevated their frequency of caries.

This could include more starchy or sugars, but also increased consumption of beer should be considered.

The combination of caries and isotopic data points to clear changes in diet for urban individuals of late medieval Holland. It is hypothesised that an increase in market dependence and availability of international trade products in the late medieval period contributed to this dietary shift. Through the urban markets, new products such as fresh fruits, but also sugar and honey, became more widely available. Additionally, new techniques for preserving fish may have resulted in increased consumption of marine foods in towns. Moreover, a greater component of omnivore diets higher trophic levels in the diet could have contributed to the observed dietary shift. This study demonstrated that the integration of paleopathological and isotopic research provided a more complete understanding of dietary changes in medieval holland.
What can FTIR tell us about archaeological bone collagen preservation?

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Keywords: bone collagen, FTIR, quality indicators

Presentation Preference - Oral

The collagen of human and animal bones is routinely extracted and analysed in Scientific Archaeology (e.g. paleodiet studies, 14C dating, etc.). Reliable information can only be obtained from analysis of collagen with a “good” level of integrity, a condition that has been determined by different approaches based on, for instance, elemental composition (C and N content), C:N ratios, collagen yield, amino acid profiling or amino acid racemization. In addition, spectroscopic techniques provide a sensitive, non-destructive method to investigate the molecular structure of extracted collagen; however, a deep knowledge of multivariate statistics is required to deal with the large amount of data generated.

We used FTIR spectroscopy to characterize non-ultrahigh resolution collagen extracted from 50 skeletons recovered in 8 necropoleis from NW Spain, representing a wide chronological period (~3-5,500 years), multiple soil environments and different funerary deposits. The second derivative and the standard deviation spectra were used to identify the most relevant absorption bands. Principal components analysis (PCA) and multiple regression models were developed to synthesize the spectroscopic information and to estimate collagen quality parameters.

The four principal components extracted by PCA were interpreted as two main diagnostic changes:
1) primary process leading to the preferential loss of collagen α-helix and a residual increase in carbohydrates, and ii) a secondary process related to the loss in β-sheets; and two minor components related to: i) variations in aliphatic side chains and ii) absorptions of the OH of carbohydrates and amide A. Highly significant regression models were obtained for the quality indicators (collagen yield, C, N, and C:N) using the principal components as predictors, but no relationships between the α 13C and δ15N and the components were found. Our data suggest that the decrease in C and N contents and the increase in C:N ratios are caused by the degradation of the protein and the relative preservation of carbohydrates.

It can be concluded that the extracted archaeological collagen does not seem to be contaminated with exogenous organic substances; for the studied samples there is a continuous change in C, N, and C:N ratios that is coupled to the structural integrity of the collagen; and ii) the observed diagnostic changes in collagen composition/structure did not affect in a significant way the δ13C and δ15N values, thus supporting their use for paleodiet reconstruction.

THS-03 Abstract 11

What can FTIR tell us about archaeological bone collagen preservation?
Finding a common framework for skeletal science in Archaeology

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Keywords: life conditions, population/environment perspective, skeletal science

Presentation Preference - Oral

Skeletal science can be defined as the application of scientific techniques to the analysis of archaeological skeletons. It includes well-known disciplines such as stable isotope analysis, ancient DNA and elemental composition; as well as other of more recent introduction as FTR, pyrolys-iQ-MS and proteomics. All these methods are under the umbrella of biogeochemical approaches, since they study the chemical, physical, geological, and biological properties of bones and teeth. Their most usual pursued aim is to reconstruct different pre-mortem features (i.e. diet, mobility and health) of the individuals the skeletons belonged to. Thus, it is worth to remark that the properties we analyze in skeletons are in fact approximations (i.e. proxies) of the multiple processes governing bone and tooth formation and degradation.

My own research started in the field of Physical Anthropology with emphasis on osteological variation and paleopathology. In the last years, I have been more involved in the application of biogeochemical techniques, discovering their utility in unraveling pre-mortem characteristics and how complementary their data are with more classic macroscopic approaches. I also realized that less attention has been paid to the role of post-mortem processes (diagenesis) on the chemical transformations of bone and their effect on pre-mortem signals.

Despite the recent advances in every specific field, and with few exceptions, most of the investigations have been highly disciplinary, seldom involving other close research areas. An example is the few connections between paleodiet reconstruction using stable isotopes and the study of an ancient health, which has been discussed in the recent workshop “Paleodiet meets paleopathology”.

What does it really matter? As Physical Anthropology teaches us, the focus should be put in the populations since they better reflect the reality of the human societies. Avoiding the bias single case studies may introduce. And the population perspective should be embedded within an integrated vision of the environment, whose changes challenge human populations at many levels (e.g. health, resources availability, migrations). The changes also pertain to specific human activities such as mining and metalurgy which may pose a threat (e.g. metal pollution) both to the societies and the environment.

Moving our focus from the straight interpretation of the data to the understanding of the processes involved will surely allow us to see the big picture that can explain aspects of human life in the past. In my opinion, a common, coherent framework based on the population/environment perspective should be implemented to be able to unveil the multiple processes that have affected the skeletons.

Ancient dental calculus as new source of information for a 10th century population from Dobrogea

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Keywords: dental calculus, molecular analysis, oral microbiome

Presentation Preference - Poster

A series of interdisciplinarily tools can be used in order to investigate ancient dental calculus from archaeological human remains. Molecular analysis can be easily associate with microscopic and stable isotope analysis to obtain ancillary information regarding past population lifestyle. The oral human microbiome can be investigated in order to determine the bacterial community in the ancient populations compared to modern ones. Dietary changes are correlated with modifications in the oral microbial community structure. A series of species with particular signatures associated to human oral microbiome can be identified and tracked through space and time in the human population. The dietary preference indicates the specificity of human-environment interaction in search for food and water.

The present study aims to investigate the oral microbial diversity and the food preference of a medieval population (10th century) situated in the south-eastern part of Romania (Capidava, jud. Constanța). Ten individuals from the population mentioned above presenting dental calculus were the subject of this research. In order to aid investigation, several methods such as stable isotope analysis, scanning electron microscopy (SEM), quantitative PCR (qPCR) and the amplification of universal barcodes for bacteria (targeting the 16S rRNA gene), fungi (targeting the ITS region) and plants (targeting the tmr, intron of the chloroplast) were applied.

Acknowledgments

This study was supported by funding from the project Genetic Evolution: New Evidences for the Study of Interconnected Structures (GENESIS): A Biomolecular Journey around the Carpathians from Ancient to Medieval Times. (CNCSIS-UEFISCDI_PNII_PCCA_1153/2011)

This study has received funding from the Genetic Evolution: New Evidences for the Study of Interconnected Structures (GENESIS): A Biomolecular Journey around the Carpathians from Ancient to Medieval Times (CNCSIS-UEFISCDI_PNII_PCCA_1153/2011) project.

Diet and dynamics of Muslims and Christians in Montell (11th-15th, Spain)

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The faunal sample presents a great isotopic variability. This is particularly the case for δ15N of sheep. Although all these animals were adults between 18 and 24 months at death, they show a 3% range (9.6-6.8‰). This may be reflecting the wide variation of ecosystems surrounding the site including some areas with saline geological materials (e.g. continental salt mines). No correlation has been found between the size of the sheep and their isotopic signal. Gauus also show a quite large variation on δ15N, while pig values are more homogenous. Terrestrial animals δ15N ranges from -18.7% to -21.0% including herbivores, which suggests a low intake of C4 plants in some of them.

In contrast, human δ13C values are within a limited range (-17.6% -18.6%). but δ15N shows a continuous shift between 9.7 and 12.7‰. The latter is an unexpected result considering that a religious community should consume basically the same kind and amount of food. There is no relationship between nuns’ isotope variation and their age at death, period of burial and main paleopathological features (including one possible case of brucellosis, another two chronic infections and two cases of osteoporosis). A reliable explanation for the results could be the austerity and fasting habits that were common in Dominican nun communities, particularly between the 16th and 18th centuries. It is known that severe famine can produce enrichment in 15N due to autocatabolism of proteins. The paleopathological study also supports the assumption of a very austere life, e.g. musculoskeletal stress markers and osteoarthritis have a high presence in the sample. This intriguing hypothesis demands more research to test the most intimate life of the female inhabitants of the cloisters in their way to find God.
Since 2012, excavations at the site of Montiel (Spain) had led to the discovery of two cemeteries, representing two socially and culturally distinct populations: one Muslim (11th - 13th century AD) and one Christian (13th - 15th century AD). The geochemical composition of these osteological remains (10 Muslim individuals and 21 Christians) was investigated to see how different religious beliefs, culture and social status might have influenced the diet of these populations which were buried in a similar environment and to compare the results obtained with historical sources.

The nature and location of dietary components determine their specific geochemical composition which pass on through the food chain and is archived in consumers’ bones. The Muslim and Christian skeletal remains can therefore be used as witnesses of individuals’ dietary habits and preferences, at least for the last years to decades before their death, as a result of their consumption in the last years of their life (long-term diet). The mineral part of the bone (boneapatite) registers the geochemical composition of the dietary constituents (lipids, carbohydrates and proteins), while the composition of bone’s organic component (collagen) reflects the geochemistry of ingested protein. The geochemical analysis of both bone-bisphosphat and collagen can therefore provide a detailed picture of the subsistence strategies adopted by the late medieval populations buried at Montiel.

These dietary strategies will be discussed regarding the type of plant resources, inferred from bone carbon isotopic ratios (\( ^{13}C \)) and oxygen isotopic ratios (\( ^{18}O \)), as well as individual’s trophic level position, addressed using bone nitrogen isotopic ratios (\( ^{15}N \)). While these isotopic tools have been routinely employed in past dietary studies and measured using an RMS, bone Sr/Ca and Ba/Ca ratios were also analysed to provide additional information on the origin of water supply, deduced from bone oxygen isotopic ratios (\( ^{18}O \)), and as well as potential mobility. Bone Sr, Ba and Ca contents were measured using a cutting-edge technique (LA-ICP-MS) that enables us to create spatial high resolution maps of bone trace element concentrations and target preferential bone histological features which might be preserved from post-mortem alteration.

This study also investigates the geochemical composition of contemporary faunal remains (ca. 10 individuals from each period studied) from neighboring settlements, with a view to establish an environmental geochemical baseline for each analytical proxy applied, and to enable the discussion of the Muslim and the Christian economy in Montiel.
Initially the genetic profiles obtained from the remains of the graves 10A - “The Warrior” and 10B - bone fragment derived from a child pointing a parent-child relationship. However the genetic profiles obtained were incomplete so it was very difficult to define the relationship type. In later stages of the project it has again carried out a genetic analysis of the remains of the graves 10A and 10B, with another bone fragment (10A grave). The results of this new analysis provided a more complete genetic profile and confirmed the earlier presumption of parent-child relationship. In the analysis of mitochondrial DNA (mtDNA), the same haplogroup mtDNA were observed among individuals of the graves 1A and 1B, and the graves 3A and 3B, which may define the kinship in the maternal line. Estimates haplogroups (hgf) of mtDNA in these relationships are H1b and H2a respectively. In addition, mtDNA haplotypes have been obtained in the analysis of the graves 2, 6B and 12. Preliminary results indicate that individuals belonging to haplogroups H1a and H1b, respectively. Recent genetic studies of the remains of the burials 13 and 15 have been inconclusive about the sex of the individuals analysed. Whole mtDNA haplotypes obtained indicate that they belonged to haplogroup J1T.

The presented studies have proven that interdisciplinary analysis from a wide range of archaeology-related and anthropological-medical fields can assist studies and broaden the knowledge of archaeologists and anthropologists to enhance the understanding of the Strzyzow Culture.

**TH5-03 Abstract 19**

**Cooking for the deceased: ceramic with lipids from the megalithic necropolis of Panoría (Spain)**

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*Keywords*: dolmen, grave goods, organic residues

**Presentation Preference** - Poster

The megalithic necropolis of Panoría was discovered in 2012 and supposes the latest addition to the finds of megalithic cemeteries from the megalithic necropolis of Panoría (Spain). Bioarchaeology – Behind the Scenes of Multi-Proxy Analyses

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*Keywords*: dolmen, grave goods, organic residues

**Presentation Preference** - Poster

In archaeology, the study of bone and teeth is key to the understanding of the past as they represent direct evidence of life on Earth. The mineral present in bone and teeth (biocarbonate - a highly substituted hexagonal calcium phosphate apatite) contains several elements that can be used to reconstruct palaeoenvironments, palaeodiet, mobility patterns, etc. However, when looking at biocarbonate of bone and teeth, diagnosis remains a problem that is often overlooked. Recent developments in high resolution infrared and X-ray analyses allow for a better assessment of the preservation of archaeological skeletal remains. Once optimal samples are selected, it is possible to go into the isotopic study of archaeological bone and teeth. In this poster we present the structural and chemical compositions of hundreds of bone and teeth with ages ranging from the Mesolithic to the present day using µXRF, FTIR microscopy and (CP-M)MS. Several alteration patterns can be observed such as fossilization, burning, leaching of elements within the sample, etc. It is also possible to evaluate the presence/preservation of organic matter in these samples. A selection of optimal samples are then analysed isotopically (813Capped, 818O, 87Sr/86Sr) and the results discussed in terms of diet, climate and mobility.

**TH5-04 Abstract 01**

**Unravelling Cremated Bone – Structural, Elemental and Isotopic Studies**

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*Keywords*: Cremated Bone, Infrared, Isotopes

**Presentation Preference** - Oral

Cremated bone occurs in many archaeological sites as small grey and white fragments. The high temperatures reached during heating induce structural, elemental and isotopic changes to bone apatite (the inorganic fraction of bone). These changes are investigated here by infrared spectroscopy and mass spectrometry in both modern heated bone and archaeological cremated specimens. The results of various heating experiments (in laboratory and natural conditions) highlight the significant carbon and oxygen exchanges with the fuel used as well as bone organic matter (mainly collagen). While not informing on dietary practice and hydrology as is the case with unburned bone/tooth, the carbon and oxygen isotope ratios of calcined samples together with infrared spectroscopy results provide information on the conditions in which the bone was burned (e.g. presence of fuel, size of the pyre, temperatures reached, dry or fresh bone, etc.). In contrast, the effect of burning on the strontium present in bone is minimal. Furthermore, as observed through artificial contamination experiments, post-burial alterations also appear to be extremely limited, which is to be expected due to the higher crystallinity of calcined bone apatite compared to unburned bone and even enamel. These experiments demonstrate that calcined bone provides a reliable substrate for mobility studies using its strontium isotope composition. The results of this work greatly extend the application of strontium isotopes to places and periods in which cremation was the dominant mortuary practice, or where unburned bone and enamel do not survive. Furthermore, carbon and oxygen isotope analyses and infrared spectroscopy provide insights into the reconstruction of ancient cremation practices.
The question of Bronze Age mobility has been central to many discussions of the period. In Britain, such discussion has been heavily influenced by the idea of a ‘burning’ rite. This term, coined by Margaret Prior, has been employed to describe the nature and intensity of cremation as a mortuary rite from the end of the Early Bronze Age, which has meant that human remains could not be subject to isotopic analysis. Whilst there is good isotopic evidence for different mobility patterns in the Beaker period, in later periods we can trace only the movement of artefacts and not the movement of people. Since the publication of a new method for carrying out strontium analysis of cremated remains within the last two years (Harvig et al 2014; Snoek et al 2015), a whole new area of analysis has therefore opened up. This paper presents the results of the first analysis of mobility in cremated human remains from the British Bronze Age. The remains come from the barrow cemetery of Ever in the Cambridgeshire fens, which is one of very few cemeteries where the barrow mounds survive and have been excavated using modern techniques. This analysis therefore offers a unique opportunity to understand how mortuary practices, and changes in mortuary practices over time, are related to the mobility of the people buried within a barrow cemetery.

Keywords: strontium analysis, Bronze Age, cremated remains, human mobility, Ever, Cambridgeshire
TH5-04 Abstract 07

Up in Flames: Animals, People, Identity and Cosmology in Anglo-Saxon East Anglia, UK

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Presentation Preference - Poster

Human and animal co-burials are a critical resource in zooarchaeology, presenting instances where a personal connection can be demonstrated between people and animals. Animal remains have been recognised in 5th to 7th century cremations in eastern England from an early date, and systematic analyses in the 80s and 90s of high-profile sites such as Spong Hill, Norfolk, have served to demonstrate the frequency, diversity and value of these inclusions. Yet the information from cremated animal remains is persistently under-exploited, due to difficulties on the one hand of accurate identification, and on the other of paltry retention of material from antiquarian and later excavations.

As analysis of animal remains in cremation burials becomes more common (although still far from universal), the increasing quality and quality of the available data makes possible new and more detailed analyses of these complex, multi-faced pyre goods. This paper will review new and existing evidence from early Anglo-Saxon cemeteries in East Anglia to explore how animals were used in funerary rites. Animals were a fundamental and ubiquitous part of early medieval society, providing a context for human action and perception and acting dynamically within that context. Their role in cremation rites is considered to be not simply symbolic, but as a complex interaction between identity, agency and cosmology.

TH5-04 Abstract 08

Cremation in the Scottish Chalcolithic

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Keywords: Cremation, Cremation, Scotland

Presentation Preference - Poster

The Chalcolithic of Britain (c. 2450-2150BC) was a period of dramatic cultural change, beginning with the arrival of Beaker material culture from continental Europe. Changes brought by the ‘Beaker phenomenon’ included new forms of material culture, including the first use of metal, bringing an end to the insular Neolithic. This period also saw a shift in burial practices: cremation, common in the Late Neolithic, was replaced by a new rite of crouched individual inhumation, frequently accompanied by elements of the new Beaker material cultural package.

The changing mortuary evidence ties into a wider narrative of cultural replacement prompted by the arrival of the Beaker people and their culture. However, cremation re-emerged at the start of the Early Bronze Age, 300 years after its supposed disappearance. Was there really a 300-year hiatus in cremation practices in response to the Beaker cultural invasion? Or are we actually looking at a break in recorded evidence?

While some authors have noted the existence of occasional ‘Beaker’ cremations, these are typically glossed over or treated as anomalies. No comprehensive study has been carried out, and there is no characterisation of what the Chalcolithic cremation rite may have involved. The aim of this poster in radiocarbon dating of cremated remains has led to a wealth of new evidence that can shed light on Beaker period burial practices and the nature of indigenous-Beaker Interactions.

This poster presents a new project aiming to characterise the burial practices of Beaker Period Britain, with a discussion of the initial results for evidence of mortuary diversity in Scotland.

TH5-04 Abstract 09

Advances in 14C dating of cremated bones at HEKAL Laboratory, Debrecen, Hungary

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Keywords: radiocarbon, dating, cremated bone, Bronze Age

Presentation Preference - Poster

A compilation of 14C dates over the last 50 years shows that less than 6% of all the bone dates were performed on purified bioapatite. The effective separation of the phase to be dated and the secondary calcite seems to be a challenge for researchers due to their identical chemical formulae. Nevertheless physical and chemical changes which occur during the cremation process make cremated bones less susceptible to this type of contamination. In spite of all the difficulties a huge demand is shown for a reliable bioapatite preparation and measuring method since in a lot of cases dating is only possible by means of such findings.

At HEKAL laboratory, Debrecen, Hungary, we have dated several hundreds of bone samples using their organic collagen fraction. As a next step we would like to adopt a method for 14 C dating of bioapatite fraction, a process which starts with the effective extraction of the carbonate content of the samples. In the course of developing our process cremated bones from the early and middle Bronze Age (2600/2500-1600/1500 BC) were used where the expected age of the samples were detectable by dating well preserved, un-burnt bone findings from the same grave. At first, the intact bones were dated using the collagen fraction. In case of bioapatite samples, after the repetitive rinse with sodium hypochlorite and acetic acid step, the crushed and sieved samples were reacted with phosphoric acid. The revealed CO2 gas was subsequently purified from other gases, graphitized by sealed tube method and its 14C content was finally measured by the MICADAS AMS. Based on our first results fractions with different particle size (0.2-0.3 and 0.5-1 mm) yielded identical carbonate content and 14C age results. However, combining the age of the three parallel bioapatite samples, the results were of the same, that of organic fraction a difference of 200-400 years was experienced presumably due to the chemical pre-treatment.

On this poster we would like to present both the evolution of our carbonate pre-treatment protocol and dating problems arisen in the case studies of the presentation entitled ‘Cremated Dating’? Case studies for the dating of Bronze Age cremation burials from Hungary.

TH5-04 Abstract 10

Excavator bias and laboratory techniques of cremation burials

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Keywords: cremation burials, excavator bias, laboratory techniques

Presentation Preference - Poster

The aim of our research is to assess three methods of analysis of cremation burials: computer tomography (CT), micro-excision; sieving of burial infill. We used eight burials from Jevišovice- Phedemlí sites (Czech Republic) for the purpose of the study. Four burials were saved and four burials were micro-excavated and scanned by CT. Burials under the study comprised "Ist" burials, urn burials and urn-sherd burials. Results show significant bias caused by possible indiscriminate handling by the excavator. The most useful method for analyzing highly fragmentary burnt bones appears to be computer tomography (CT) together with micro-excision. When only CT is used, the precise bone identification is not possible, whereas during micro-excision tiny objects like metal slags can be overlooked, dislocated fragments lost, and burial volume measured imprecisely. Combination of the two methods ensures that the excavator reconstructs activities of past populations and not results of his/her own procedure.

TH5-04 Abstract 11

Cinerary urns radiology and knowledge sharing: a web-based "paleoapacs" proposal

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Keywords: Cinerary urns, Database

Presentation Preference - Poster

Cremation is a ritual treatment of the dead body that represents both a potential source of notices about the ancient historic societies and a real challenge for a physical anthropologist. With the introduction in the medical clinical practice of digital high-definition powerful radiological tools (MDCT, RM, QCT, CBCT etc.), it is possible to carry out a non-destructive study of the cinerarium and its cremated remains in some way comparable with laboratory micro-excision. Unfortunately, actual studies are based on a relative restricted number of cases, while the problems that we must tackle is the correct interpretation of the images and the quantitative results need a large base of data and a effective share of the experience about it.

PACS (Picture Archiving and Communication System) can be viewed as a corollary of the digitization of diagnostic medical images. Born in the eight decade of the last century, the problem of the radiological archives and to minimize the time of distribution of X-ray films, in the last ten years PACS become a powerful system of real-time, full-time exchange medical data imaging system. Moreover, coupling a PACS with a clinical database, it’s possible to create complex and useful digital shared medical records.
Cremated Human Remains of the Late Roman period of the Middle Volga Region, Russia

Author - Makarova, Ekaterina, Khalikov Institute of Archaeology, Kazan, Russian Federation (Presenting author)

Keywords: Komarovo burial ground, the Late Roman period, the Middle Volga Region

Presentation Preference - Poster

The research focuses on human remains from Komarovo burial ground (the first half of the 6th - the first half of the 7th centuries). The excavations have been conducted since 2013. Currently, 21 cremated burials have been unearthed. These burials can be divided into three groups: human, animal and mixed burials. Four burials among them can not be attributed to any of the groups due to fragmentariness and small amount of bones remained.

Human burials. The maximum size of the fragments does not exceed 40-50 mm. The total weight of bones varies from 150 to 850 grams. As regards the colour characteristics, the bones of white and pale-grey colour predominates. The colorimetric scales comparison revealed the maximum temperature of cremation that did not exceed 700°C.

In a number of cases, the remains contain transverse fractures, frequently in a curvilinear pattern, and more irregular longitudinal splitting. These features bear an evidence that the bodies were cremated during the first months after death, when bones still contain lipids and organic elements. Animal burials. Two burials were attributed to this group. Unfortunately, the species were not identified within the framework of this research. The maximum total weight of bones in such burials was 1 kilogram. The colour characteristics analysis showed the simultaneous presence of weakly burned, unburnt and white bones, indicating that the temperature of cremation varied from the lowest to over 800°C.

Besides the remains with thermal deformation and fissures, these burials also contain burned 'dry' bones, dehydrated and delipidated at the moment of cremation.

Mixed burials. The third group contains human and horse remains, with two burials contain inhumations with animal bones. The first one contains the fragments of pelvic skeleton of horse, the second one - the pelvis, the scapula, metapodial of horse. The colour analysis of the identified human remains found the same features specific to the first group. The cremation temperature for the animal remains did not exceed 300°C.

The gender and age of cremated people was identified in 14 cases. Only one of them was a 7-8 years old children. Other burials belonged to adults. The majority of them was 45-65 years old women. Only two burials contain remains of men. The insufficient state of conservation, fragmentation and the lack of necessary morphological markers made impossible the gender determination in 5 cases.

The further studies of Komarovo burial ground will include the application of natural scientific methods, namely spectral analysis for defining human and non-human remains, histological bone structure analyses for age determining and the analysis of the 87Sr/86Sr ratio for migration processes in the local level.
PLAGUE IN DIALECTRIC AND INTERDISCIPLINARY PERSPECTIVE

Friday, 2 September 2016, 09:00-16:00
Faculty of History, Room Sp1

Author: Gunnersen Schünemann, Doris, Universität Bonn, Vor- und Frühgeschichtliche Archäologie, Bonn, Germany (Presenting author)
Co-author(s): Hacki, Sacha, Anthropologie des Populations Passées et Présentes, Université de Bordeaux, Pessac, France
Co-author(s): Keller, Marcel, Max Planck Institute for the Science of Human History, Jena, Germany
Co-author(s): Law, Christina, University of Nottingham, Nottingham, United Kingdom

Keywords: Diachronic perspective, Plague

Presentation Preference -Regular session

Plague, an infectious disease caused by the bacterium Yersinia pestis, occurred in at least three major historical pandemics: the Justinianic Plague (6th to 8th century), the Black Death (from 14th century onwards), and the modern or Hong Kong Plague (19th to 20th century). Yet DNA from bronze age human skeleton has recently shown that the plague first emerged at least as early as 3000 BC. Plague is, as any disease, both a biological as well as a social entity. Different disciplines can therefore elucidate different aspects of the plague, which can lead to a better understanding of this disease and its medical and social implications.

The session shall address questions like:
- Which disciplines can contribute to the research on the plague?
- What are their methodological possibilities and limitations?
- How can they work together in order to come to a more realistic and detailed picture of the plague in different times and regions?
- Which ways had societies to react to the plague? How can they be studied or proved?
- Which commons and differences can be seen between the Justinianic Plague and later plague epidemics? Are there epidemiological characteristics that are essential and/or unique to plague?
- What are possible implications of the pandemic spread and endemic occurrence of plague through the ages for the interpretation of historical and cultural phenomena?

We would like to invite researchers from the disciplines of archaeology, anthropology, biology, history, medicine and related subjects to present papers in our session.

How do new pathogens emerge, and how do these pathogens take advantage of host processes and pathways to cause disease? Yersinia pestis, the etiological agent of plague, is a recently emerged clone of the gastrointestinal pathogen Y. pseudotuberculosis, but the specific genetic changes that enabled Yersinia to cause the respiratory disease known as pneumonic plague are not well understood. By using a mouse model of respiratory infection combined with comparative genetic and genomic studies between Yersinia species, we have identified two specific events – the acquisition of the Pla protease and the inactivation of the YadA adhesin – as key steps in the emergence of Y. pestis as an easily transmissible, severe respiratory pathogen. The acquisition of the Pla protease enabled ancestral Y. pestis strains to grow to high levels in the lungs and cause a fulminant, multifocal severe pneumonia, while the loss of YadA shifted the respiratory infection from a restricted, granuloma-like pathology to a loosely contained, easily expelled state. Indeed, the loss of YadA by Y. pseudotuberculosis may have been a key step by which Y. pestis acquired the ability to be spread by respiratory droplets, thus enabling epidemics of pneumonic plague.

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TH5-05 Abstract 03
Flies, rats and other stories - The palaeoecology of the Black Death
Author: Panagiotakopulu, Eva, University of Edinburgh, Edinburgh, United Kingdom (Presenting author)

Keywords: flies, palaeoecology, plague

Presentation Preference - Oral

Bubonic plague is a disease which involves various animal vectors and hosts and its ecology is both complex and of importance in terms of its spread and virulence. The origin of the Black Death is central to its better understanding and can throw light on the medieval pandemic and later epidemics. This paper discusses the ecology and biogeography of bubonic plague and looks into the natural history and palaeoecology relating to its vectors, primary and secondary. Xenopsylla cheopis and other flea species and hosts, the e.g. Anicerinthys nitidus and Rattus rattus. The possible origins of the disease and its connection with the first urban centres of Egypt and Mesopotamia are discussed taking into account climatic, environmental and archaeological evidence. The hypothesis of the spread of the Black Death via trade links with Asia and Europe, in relation to the relevant archaeological record are also explored.

TH5-05 Abstract 04
Reconstructing ancient pathogens - discovery of Yersinia pestis in Eurasia 5,000 Years Ago
Author: PhD Raamussen, Simon, Technical University of Denmark, Kgs. Lyngby, Denmark (Presenting author)
Co-author(s): Allentoft, Morten, Center for Geogenetics, Copenhagen, Denmark
Co-author(s): Nielsen, Kasper, Technical University of Denmark, Kgs. Lyngby, Denmark
Co-author(s): Orlando, Ludovic, Center for Genogenetics, Copenhagen, Denmark
Co-author(s): Sikora, Martin, Center for Genogenetics, Copenhagen, Denmark
Co-author(s): Sjögren, Karl-Göran, University of Gothenburg, Gothenburg, Sweden
Co-author(s): Kristiansen, Kristian, University of Gothenburg, Gothenburg, Sweden
Co-author(s): Willerslev, Eske, Center for Genogenetics, Copenhagen, Denmark

Keywords: ancient DNA, paleogenomics, plague

Presentation Preference - Oral

The bacterium Yersinia pestis is the etiological agent of plague and has caused human pandemics with millions of deaths in historic times. How and when it originated remains contentious. Here, we report the oldest direct evidence of Yersinia pestis identified by ancient DNA in human teeth from Asia and Europe dating from 2,800 to 5,000 years ago. By sequencing the genomes, we find that these ancient plague strains are basal to all known Yersinia pestis. We find the origins of the Yersinia pestis lineage to be at least two times older than previous estimates. We also identify a temporal sequence of genetic changes that lead to increased virulence and the emergence of the bubonic plague. Our results show that plague infection was endemic in the human populations of Eurasia at least 3,000 years before any historical recordings of pandemics. Our findings open the possibility of identifying other blood borne pathogens directly from human remains (See S. Raamussen, M. E. Allentoft, K. Nielsen, L. Orlando, M. Sikora, K.-G. Sjögren ... E. Willerslev (2015). Early Divergent Strains of Yersinia pestis in Eurasia 5,000 Years Ago. Cell, 163:571–582).

TH5-05 Abstract 05
Plague in the eastern Mediterranean region 1200-1000 BC?
Author: Prof. Wallenius, Lars, University of Oslo, Institute of Basic Medical Sciences, Department of Physiology, Oslo, Norway (Presenting author)

Keywords: demographic crises, Mycenaean, plague

Presentation Preference - Oral

How do new pathogens emerge, and how do these pathogens take advantage of host processes and pathways to cause disease? Yersinia pestis, the etiological agent of plague, is a recently emerged clone of the gastrointestinal pathogen Y. pseudotuberculosis, but the specific genetic changes that enabled Yersinia to cause the respiratory disease known as pneumonic plague are not well understood. By using a mouse model of respiratory infection combined with comparative genetic and genomic studies between Yersinia species, we have identified two specific events – the acquisition of the Pla protease and the inactivation of the YadA adhesin – as key steps in the emergence of Y. pestis as an easily transmissible, severe respiratory pathogen. The acquisition of the Pla protease enabled ancestral Y. pestis strains to grow to high levels in the lungs and cause a fulminant, multifocal severe pneumonia, while the loss of YadA shifted the respiratory infection from a restricted, granuloma-like pathology to a loosely contained, easily expelled state. Indeed, the loss of YadA by Y. pseudotuberculosis may have been a key step by which Y. pestis acquired the ability to be spread by respiratory droplets, thus enabling epidemics of pneumonic plague.
Over a period of 150 years from about 1200 BC, the Mycenaean states collapsed. The great Mycenaean centres did not decline slowly during this period, but suffered sudden destruction at the very peak of their prosperity. Five hypotheses have been proposed to explain the collapse: invasion, civil war, local risings, earthquakes and climate change. However, none of them seems to provide a satisfactory explanation of the existing archaeological material. At about the same time, similar disturbances and destruction also afflicted Cyprus, Syria and Anatolia, and the Hittite empire came to an end. The temporal and geographical distribution of these disasters and the subsequent course of events in the Aegean region show a strong similarity to developments in the European region following the two later pandemics of plague. In addition, there is strong documentary evidence that there was at least one epidemic of bubonic plague with high mortality in the eastern Mediterranean region at the relevant time. Recent analyses of Bronze Age DNA sequences resembling Yersinia pestis indicate that the infection was endemic in human populations, and that it acquired sufficient virulence to cause bubonic plague at some point in time between 1660 and 950 BC.


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**TH5-05 Abstract 06**

**Plague Before the Plague: Early Bubonic Plague**

Author - Muthall, John, Harvard, Cambridge, Massachusetts, United States of America (Presenting author)

Keywords: bubonic plague, Greek medicine

Presentation Preference - Oral

In October 2015, Rasmussen et al. published evidence that Yersinia pestis was infecting human hosts in Western Eurasia as early as the Bronze Age. In the past, molecular evidence did not give historians a reason to doubt that Y. pestis was relatively new to Europe at the time of the Justinianic Plague. The new evidence that Y. pestis was active near the Mediterranean some 1,500 years before the Justinianic Plague therefore calls for a reevaluation of the evidence for plague in Antiquity before the Justinianic Plague.

This paper will report the conclusions of a close philological study aimed at uncovering what evidence there is for plague in the medical sources of antiquity, specifically, the Hippocratic Corpus, Rufus of Ephesus, and Galen. The picture that emerges from the medical sources is that Y. pestis was unknown to medical writers until around the middle of the first century AD, as Rufus of Ephesus reports a disease that resembles plague. The plague remains familiar to medical authors from the first century BC to the end of the first century AD, when both Rufus and Aetius both describe an awareness of Y. pestis. Intriguingly, Galen, who flourished in the mid second century, only a few generations after Rufus, does not show any awareness of bubonic plague. First, this paper will demonstrate that there is no compelling evidence of Y. pestis in the Hippocratic Corpus. While the term θυμός (thymos) to describe glandular swellings appears twelve times in the Hippocratic Corpus, none of these twelve instances suggest that these swellings are plague buboes as opposed to other glandular swellings. A passage by Rufus of Ephesus that has been preserved in the Medical Collections of Oribasius contains the first description of a disease that we can confidently identify with plague. Rufus calls the disease “pestilential boubōnes” and details it in a way that could be understood as buboes. Indeed, Posidonius and Dioscorides, both contemporaries of Y. pestis and to sixth-century descriptions of the Justinianic plague. In this passage, Rufus cites three little known authors who also knew of “pestilential boubōnes”. Posidonius, Dioscorides, and Dionysius Kutsos. The names Poseidonius and Dioscorides could correspond to a number of possible figures, though in contrast, recently published Y. pestis sequences from the 1st century plague outbreak in Marseille, France do show ancylosis in the strains obtained from Black Death victims, but are not represented in any sampled modern lineages. Taken in concert, the phylogenetics of ancient pandemic Y. pestis genomes reveal that the geographical spread of the disease and subsequent establishment of rodent reservoirs varied between pandemics.

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**TH5-05 Abstract 08**

**Early medieval burials of plague victims: examples from Aschheim and Altenirding (Bavaria, Germany)**

Author - Dr. Gutschi-Schürmann, Doris, Freie Universität Berlin, Berlin, Germany (Presenting author)

Co-author(s) - Harbeck, Michaela, Department of Anthropology, State Collection for Anthropology and Palaeoanatomy, Munich, Germany

Co-author(s) - Keller, Marcel, Department of Anthropology, State Collection for Anthropology and Palaeoanatomy, Munich, Germany

Co-author(s) - Päffgen, Bernd, Ludwig-Maximilian's University Munich, Munich, Germany

Co-author(s) - Rott, Andreas, Department of Anthropology, State Collection for Anthropology and Palaeoanatomy, Munich, Germany

Keywords: early medieval cemetery, Justinianic Plague, Upper Bavaria

Presentation Preference - Oral

With this paper, we present burials from two early medieval cemeteries, Aschheim-Bajuwarenring and Altenirding/Klettham, where the causative agent of plague, Yersinia pestis, could be detected palaeogenetically. The burials from the early medieval cemeteries of Aschheim-Bajuwarenring and Altenirding/Klettham show that plague victims have been dressed and prepared carefully for their funeral. Compared to other graves from these cemeteries on the one hand and to contemporary burials in general, nothing basically indicates that the Y. pestis infected individuals had been treated differently than other deceased. Among the buried who were infected with Y. pestis occurred some of the richest and most well-equipped graves of the cemeteries. Therefore, it cannot be proven on base of the Early Medieval plague graves of the Munch graven plan that “[...] at that time all the customary rites of burial were overlooked. For the dead were not carried out escorted by a procession in the customary manner, nor were the usual charms sung over them [...]” (Procopius, De Bello Persico II 23, 15). On the contrary: the burial rites, as far as reconstructable, had been carefully conducted. The only difference is that the so far confirmed victims of the plague seem to have been more often buried in double or multiple burials. However, the screening of single burials is still in an initial stage.

The Justinianic Plague was nevertheless a disease that affected Europe in the Late Antiquity, but its occurrence appears not everywhere as catastrophic as the written sources make us believe.

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**TH5-05 Abstract 09**

**Analysis of a high-coverage Yersinia pestis Genome from a 6th Century Justinianic Plague Victim**

Author - Feldman, Michal, Max Planck Institute for the Science of Human History, Jena, Germany (Presenting author)

Co-author(s) - Harbeck, Michaela, State Collection of Anthropology and Palaeoanatomy, Munich, Germany

Co-author(s) - Keller, Marcel, Max Planck Institute for the Science of Human History, Jena, Germany

Co-author(s) - Syros, Maria, Max Planck Institute for the Science of Human History, Jena, Germany

Co-author(s) - Rott, Andreas, State Collection of Anthropology and Palaeoanatomy, Munich, Germany

Co-author(s) - Trautmann, Bernd, State Collection of Anthropology and Palaeoanatomy, Munich, Germany

Co-author(s) - Scholz, Holger, Bundeswehr Institute of Microbiology, Munich, Germany

Keywords: ancient DNA, phylogenetics, plague of Justinian

Presentation Preference - Oral

The phylogenetic tree of the plague-causing pathogen Yersinia pestis has expanded in the last five years to include ancient draft genome sequences, which have allowed facets of the history of this disease to be explored in ways that were previously impossible. This pathogen has caused at least three human plague pandemics: the Plague of Justinian (6th-8th centuries), the Black Death (1347-1352 with waves continuing from the 14th-18th centuries) and the Modern pandemic (19th-20th centuries), which have all been genetically characterized. Here we present the draft genomes obtained from two individuals who died in the first pandemic that allowed for genetic characterization of this pandemic. On the basis of maximum likelihood phylogenetic analyses, we conclude that the Y. pestis lineages that caused the Plague of Justinian and the Black Death 800 years later were independent emergences from rodent to humans. These results show that rodent species worldwide represent important reservoirs for the repeated emergence of diverse lineages of Y. pestis into human populations. In contrast, recently published Y. pestis sequences from the 18th century plague outbreak in Marseille, France do show ancylosis in the strains obtained from Black Death victims, but are not represented in any sampled modern lineages. Taken in concert, the phylogenetics of ancient pandemic Y. pestis genomes reveal that the geographical spread of the disease and subsequent establishment of rodent reservoirs varied between pandemics.
TH5-05 Abstract 10

Plague in Valencia, 546: A Case Study of the Integration of Texts and Archaeology

Author - Gruber, Henry, Harvard University, Cambridge, United States of America (Presenting author)

Keywords: bubonic plague, mass graves, Spain

Presentation Preference - Oral

Although so-called Justinianic Pandemic of Yersinia pestis that began in the early 540s dramatically altered the history of the Mediterranean and the Near East, information about it is fragmentary. This is especially true in the Western Mediterranean, where few narratives or documents reveal the plague’s impact. Archaeology can fill these gaps. Recent work on the prevalence of mass graves in the late and immediately post-Roman world suggests that mass graves, properly understood, can serve as a proxy for mass death. However, despite the work being done to bring together the documentation of these graves, it has been difficult to know whether these graves result from plague, famine, violence, or some other unknown cause.

In this paper, I will argue that the canons of the Council of Valencia provide us with a test case for combining archaeological and philological evidence for the Justinianic Pandemic. The council was held in 546, three years after the first outbreaks of plague in Spain. The fifth canon is concerned with the sudden and unexpected death of bishops and legislates that bishops be buried “in their own place”, so that “the old traditions for burying bishops might not be disdained”. Given the large number of sixth-century mass graves from Valencia, concern about the proper burial of bishops “in their own place” suggests an institutional reaction to the plague pandemic and the breakdown of traditional burial practices. The evidence, however, is not straightforward.

The paper is divided into three parts. The first analyzes the canon within the context of debates on the care of the dead in Late Antiquity. The second studies the archaeological evidence for burials in Valencia, both those of bishops within the sixth-century ecclesiastical complex and the mass graves that are currently being documented. The third reflects methodologically on the potential for integrating church documents and funerary archaeology. This study will use the concatenation of evidence from Valencia to both chart a specific instance of the Late Antique plague and showcase the promise—and difficulty—inherent in the interdisciplinary study of bubonic plague.

TH5-05 Abstract 11

Germany and the Black Death: a zooarchaeological approach

Author - Ma Pavlou, Prohlamois Dimi, Ludwig-Maximilians-Universität München, Munich, Germany (Presenting author)

Keywords: Black Death, livestock keeping, size

Presentation Preference - Oral

Zooarchaeology is the study of faunal remains from archaeological sites. Animal bones can be used to track changes e.g. in herd composition, size or animal health. Significant changes in size over short periods of time are a testimony of the human influence upon their livestock. An increase in size can be triggered through food of higher quality, improvement of keeping conditions, but also through the import of new breeds from areas with specialized animal breeding. A decrease of size on the other hand is interpreted as deterioration caused not only by exogenous factors such as climatic shift and epizootic diseases, but also by societal and demographic changes. Zooarchaeological evidence can therefore reveal new, non-documented aspects. In the first half of the 14th century AD several devastating events affected great parts of Europe, leading to a gradual transformation of human society. The instability and unpredictability of the climate was the main cause of successive famines between 1315 and 1317, resulting in the loss of many lives. At the same time epizootics among cattle and sheep causing massive casualties across Central and Northern Europe must have had a great impact on the human nutrition. In the mid of the 14th century the Black Death (1347-1352) hit the European continent, causing long-term social and economic changes. The focus of the present paper is on German Late-Medieval and Regensburg archaeological sites. In two particular finding sites, the zooarchaeological evidence suggests that the Black Death had a negative impact on domestic livestock, especially on cattle. In addition supra-regional studies reveal that the impact differed not only between geographical localities, but also between settlement types.

TH5-05 Abstract 12

Understanding Black Death: News from Denmark

Author - Dr. Gamble, Julia, University of Toronto, Toronto, Canada (Presenting author)

Keywords: bioarchaeology, Black Death, Denmark

Presentation Preference - Oral

The mid-14th century Black Death epidemic reverberated across Europe, having significant impacts on the population which shaped social, economic, and political dynamics in the years to come, and leaving its selective mark on the surviving populations from a genetic standpoint. The epidemic has since captured the attention of an interdisciplinary following of researchers, with core interests in the social and biological impacts and the disease etiology, amongst other areas. It is estimated that up to 50% of the population was lost over the course of the epidemic in Denmark, but up until now little bioarchaeological or molecular work has been done on the disease in Denmark. As an acute infection, the Black Death epidemic left no diagnostic anatomical signs on the skeletal remains of medieval populations. Thus far, our understanding of the disease remains reliant on historical accounts and on modern clinical understandings developed from more recent outbreaks of bubonic plague (a disease caused by Yersinia pestis, which is one of the prime contenders for the causative agent of Black Death). In reality, the causative agent of one of the most significant epidemic crises in recorded history is still an incredibly contentious subject, and our understanding of the circumstances affecting the health of populations around the period of the Black Death epidemic is limited. Yersinia pestis has been identified in Black Death cemeteries in Europe, but thus far no published work is available from Denmark. By building a better understanding of the pathogen load of the populations in Denmark at the time of the Black Death crisis, as well as both before and after the epidemic, it will be possible to attain a better understanding of the role Yersinia pestis may have played in the population, and of the immune changes and responses to the epidemic. The current paper presents preliminary results from an international team combining bioarchaeological and molecular methods to gain a better understanding of the epidemiological patterns surrounding the Black Death epidemic in Denmark.

TH5-05 Abstract 13

A demographic history of the plague bacillus revealed through ancient Yersinia pestis genomes

Author - Spyrouou Maria, Max Planck Institute for the Science of Human History, Jena, Germany (Presenting author)

Keywords: bioarchaeology, Black Death, Denmark

Presentation Preference - Oral

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Author - Dr. Gamble, Julia, University of Toronto, Toronto, Canada (Presenting author)

Keywords: bioarchaeology, Black Death, Denmark

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One of the most devastating events in human history was the second plague pandemic, which began with the Black Death (1347-1351). Sporadic outbreaks of plague continued in Europe until the 18th century, when the disease essentially disappeared. Initial sequencing of Yersinia pestis genomes from London victims of the second plague pandemic, identified the Black Death as the event that gave rise to most of the Y. pestis genetic diversity present around the world today. This result raised further interest regarding the relationship of this lineage to the ones associated with post-Black Death outbreaks, and to modern plague lineages. Recent climatic and ancient DNA studies have attempted to explore these relationships, although a clear consensus is still yet to be reached. Here, we present three historical Y. pestis genomes from the second plague pandemic in Spain, Russia and Germany. Our results provide support for low genetic diversity in the plague bacterium during the Black Death, followed by a subsequent eastward travel of lineages to later become the source for the worldwide third plague pandemic, which began during the 19th century in China. In addition, our data from a post-Black Death outbreak in Germany are best explained by the persistence of a European plague lineage that is now likely extinct.

TH5-06

NEW KNOWLEDGE ABOUT PAST SOCIETIES THROUGH THE USE OF ADVANCED REMOTE SENSING TECHNIQUES

Saturday, 3 September 2016, 09:00-18:30
Faculty of Philology, Room SP2

Author: Risaf, Ole, NTNU University Museum, Trondheim, Norway (Presenting author)

Co-author(s) - Gustavsen, Lars, Norwegian Institute for Cultural Heritage Research, Oslo, Norway
Co-author(s) - Stigler, Hanna, Leiden University, Leiden, Netherlands

Keywords: Cultural-historical knowledge, Landscape archaeology, Remote sensing

Presentation Preference: Regular session

In recent years, the study of archaeological landscapes has witnessed an increased use of advanced remote sensing techniques such as geophysics, lidar and satellite. Aerial archaeology is another important tool for archaeologists working with landscape archaeology, and has been so for decades. Advanced techniques are used separately or combined in integrated approaches applied to larger or smaller landscapes with the aim of deducing information on landscape use in prehistory. The results of such projects are often presented with a certain focus on the techniques themselves and the fascinating possibilities they present, or simply demonstrate a range of new discoveries and more or less spectacular results. In this session we want archaeologists or other scholars to present results that are not mere of technical interest, but where the use of advanced techniques in archaeological projects has significantly increased cultural-historical knowledge. We also welcome presentations on a more comprehensive theoretical level concerning the intersection between the use of advanced remote sensing techniques and how we, as archaeologists, understand and act with landscape issues, bridging the gap between technologically based research and the human perception of the landscape. Contributions can be presentations of final or preliminary results from research and development projects in all kinds of landscapes and archaeological contexts throughout Europe or from other continents.

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TH5-06 Abstract 01

Mid-Holocene settlement complexity in Northern Ostrobothnia, Finland

Author: Pesonen, Petro, National Board of Antiquities, Helsinki, Finland (Presenting author)

Keywords: LiDAR, Neolithic, settlements

Presentation Preference: Oral Additional information

LiDAR mapping has recently become a standard tool in archaeological survey in Finland. In 2015, a set of LiDAR visualisations from Northern Ostrobothnia were investigated and a large number of housetop sites were later inspected in terrain. A total of 481 new housetop sites were recorded during field survey thus bringing the River Siilinjoki area to one of the densest occurrences of pithouses in the country, only rivalled by similar areas in the River Iijoki (Karinsälä) and River Kemijoki (Törmävaara) areas in the north.

The sites are roughly dated between c. 4000-2500 calBC, to the period of the suggested Mid-Holocene population peak further stressing the relevance of this period in Finnish archaeology. It is not only the large number of the pithouses themselves, but the complexity of the settlement patterns as well opening exciting new avenues to the study of complex hunter-gatherer societies in the region.

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TH5-06 Abstract 02

Changing the perspective of Neolithic civilization: Sopot culture tells discovered by remote sensing

Author: Dr. Štigl, B., Institute of Archaeology, Zagreb, Croatia

Co-author(s) - Kalatelic, H., Institute of Archaeology, Zagreb, Croatia (Presenting author)

Keywords: GIS, prehistoric enclosures, Sopot culture

Presentation Preference: Oral

The Eastern Croatia can be considered as the heartland of the Neolithic community known as the Sopot culture. Numerous sites of this culture are already known, and only a small number of them were excavated. The project of aerial archaeological survey...
of eastern Croatia, including other techniques of remote sensing such as satellite infrared images, resulted in discovery of many newly-discovered tell sites. The huge amount of data obtained by aerial cyclical recording and remote sensing has been related to the data obtained by field surveys. Such large datasets require to be structured into GIS databases (Big Data issue) which will make the basis for a brighter image of the prehistoric landscape in the eastern Croatia.

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**TH5-06 Abstract 03**

**Exploring the subsoil of the wide area of Mont'e Prama**

(Cabras, Sardinia, Italy)

**Author** - Dr. Trogò, Antonino, University of Cagliari, Cagliari, Italy (Presenting author)

**Co-author(s)** - Prof. Ranieri, Gaetano, University of Cagliari, Cagliari, Italy

**Co-author(s)** - PhD Lodo, Francesco, University of Cagliari, Cagliari, Italy

**Co-author(s)** - PhD Piroddi, Luca, University of Cagliari, Cagliari, Italy

**Keywords:** Mont'e Prama, Multichannel Geroradar, Wide Area Prospection

**Presentation Preference:** Oral

40 years ago, an archaeological discovery occurred by chance in the Mont'e Prama region situated near the village of Cabras, in the Sinos peninsula (Sardinia, Italy). Only recently (March 2014) after a long difficult restoration the famous stone statues of Mont’e Prama, were presented to the public in two different museum contexts (Cagliari and Cabras).

The old archaeological digs concluded after performing excavations tests and trenches in every direction with the idea that the discovery was accidental and did not extend further.

From 2013 to 2015 a wide geophysical campaign was carried out both in the archaeological site of Mont’e Prama and its surrounding areas.

During 2014, an archaeological dig (20x10 metres) was done on the basis of the geophysical results. This digs gave very important findings of various kinds like tombs, baetyl of very great dimension, models of nuraghe and almost intact stone statues.

The analysis of the relationships between findings and their related anomalies clearly showed some typical shapes of the anomalies. The main kinds of findings, particularly tombs and baetyl, showed characteristics anomalies that are repetitive all over the excavated area.

Starting from these remains, all the QPR data acquired during the entire survey, from 2013 to 2015, over an area of about 12 hectares, were analysed to detect patterns which matched those identified in the excavated area. Basing on this kind of approach, it was possible to try an interpretation of the QPR data also in the unexcavated areas.

The analysis of the QPR data produced images that are very close in shape and density to those observed in association to tombs in the excavated area. As in the excavated area, these kind of anomalies are only aligned along linear paths in NNE-SSW direction. These alignments are very extended both northward and southward with respect to the known archaeological area.

Some others anomalies, scattered over the investigated area, display shapes very similar to those from baetyl.

Another frequent pattern was also recognized but without direct correspondence to those from the dug area. The new anomalies detected in the surrounding areas show size of some metres. Without a direct link to excavated remains, it is difficult to give a sure interpretation of them. Basing on their distribution and on the archaeological framework inferred from the excavations, it is possible to suppose that this kind of anomalies could be associated to the presence of ancient roads.

This kind of approach allowed us to tentatively extend the interpretation of QPR data to an area wider than the investigated one. Actually, the area investigated from the archaeologists it is less than 1,000 square metres that is very small if compared to those surveyed by QPR (about 130,000 square metres).

The whole pattern and extension of archaeological remains show that in the site of Mont’e Prama the archaeological area is wider than the excavated one. It is plausible to suppose that tombs and other kinds of anomalies exist at least for hundreds of metres both northward and southward from the archaeological digs.

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**TH5-06 Abstract 04**

**Using LiDAR in Normandy: a global changing in perception of territorial organization in Antiquity**

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**Keywords:** LiDAR, Seine valley, Normandy, Territorial organization since Gaulish period

**Presentation Preference:** Oral

In years 2010-2011, a LiDAR survey campaign was led by the « Group of Public Interest Seine- Aval » (GIP-SA) from the upstream of Rouen to the English Channel with the aim of drawing up accurate topography of the Seine valley and watershed adjoining the river. This data, available on over 1100 km², have for primary purpose of anticipating the rise of seawater, with the global climate changing, by calibrating the defense structures against the sea accordingly.

This very appropriate survey campaign had covered the public forests and also numerous private woods of lesser importance. The new data have been processed jointly by the French Ministry of Culture and Communication and the Office National des Forêts. They generated images ready to be used in archaeological analysis on more than 300 km² (situation in 2015 - to be increased in the future). The contributions are considerable, under forest cover or not, but the zone with woodland needed to be tackled first for the virtual forest removal.

A re-reading of the regional archaeological documentation then forces us to reconsider the state of knowledge, particularly in terms of regional archaeological mapping. Dozens of new settlements, or anomalies, need to be added in the National archaeological map and inventory. In the same meaning, the global understanding of the territorial organisation from Gallic and Gallo-Roman periods is considerably renewed. Indeed, the opillis (little forts) that dot this part of the Seine valley are particularly well readable, and the understanding of their insertion in the territorial organization becomes more relevant. Their morphology and their relation to the topography and the road system are greatly reinterpreted. In addition, the “antique” road called “Chausée Jules César”, serving the plateaux on the north side of the Seine, finally shows his consistency as a strong element of organizing Caletois and Vologaisse pagi. This organization seems largely inherited from a structure already in place before the end of the Iron Age. Connected with the latest studies in geoaarchaeology and archaeogeography, the new data from LiDAR also reveal the great adaptation of the drawing of the gallo-roman road to the territory through which it passes (topography, hydrology, toponomy).

Collecting informations and data analysis will continue for several years, but the data from the LiDAR have already used in two PhD and several Master’s degrees. Two systematic excavations, initiated in 2012, are strictly the result of the new opportunities offered by this tool under development. Medieval, modern and contemporary times, also benefit from this data renewal. But many things are still to come.

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**TH5-06 Abstract 05**

**Airborne LiDAR data for the study of Roman military presence in NW Iberia**

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**Keywords:** Archaeological prospection, LiDAR, Roman Military Archaeology

**Presentation Preference:** Oral

The Roman military settlements are usually characterized by the perishable nature of the structures and the material culture associated to them. Since these sites are almost invisible in the landscape, the use of remote sensing techniques for their study became essential. Although the use of certain remote sensing tools – i.e. aerial photography- on this issue in the Iberian Peninsula is not new, the development of Roman military archaeology in recent decades greatly demanded a significant renovation of the methodological approaches. In this way, we put into practice a low-cost methodology combining historical and modern aerial photography, satellite imagery, airborne LiDAR, GIS and conventional archaeological field survey techniques. These tools actually provide a new and qualitatively differential approach, allowing us to study the spatial, locational and morphological characteristics of these sites, and thus leading to a more contextualizing approach. In this paper, we will focus on the differential comparison of the use of airborne LiDAR data against that presented in the recent methodological approach. By analyzing some results of this tool to different landscapes, terrain types and vegetation canopies, we can outline the potential and limitations of it. On that basis, we can then develop a predictive model for its use when studying Roman military sites such as temporary/marching camps. This technique allows us to map archaeological landscapes as a whole, so we need to develop different strategies to increase the visibility of certain types of features in the landscape. Landscape is not just a messy amount of archaeological features, but a palimpsest of multiple temporalities we need to read and understand.

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**TH5-06 Abstract 06**

**Assessing ephemeral prehistoric occupation by off-site geophysical prospection in Calabria (Italy)**

**Author** - De Neef, Wilke, University of Groningen, Groningen, Netherlands (Presenting author)
Science and multidisciplinarity in archaeology

Between 2011 and 2014 the authors investigated in detail the prehistoric land use and occupation of the Raganello River basin in southern Italy, which had previously (2000-2010) been archaeologically surveyed by the University of Groningen Institute of Archaeology. These investigations aimed at fine-tuning non-invasive archaeological prospection methods for ephemeral archaeological remains and at mitigating pervasive research biases in the study of the protohistoric landscape and land use. Here we report on one aspect of this wide-ranging project, namely the use of geophysical prospection as a means to avoid undue focus on known sites and/or elevated-density peaks in the archaeological surface record.

We first present the experimental application of magnetic-based geophysical techniques for the detection of ‘non-sites’, i.e., archaeological features without any apparent surface expression, in three landscape zones with different geology, morphology and soils, and with potentially different archaeological records. In the sandy and gravelly soils of the foothill zone bordering on the coastal plain of Sybaris (100-400m asl), an exploratory swath of magnetic gradiometry across the already intensively fieldwalked agricultural area ‘Contrada Damale’ revealed evidence of anthropogenic features without associated surface artefact scatters. Some of these features have direct parallels with archaeologically relevant anomalies (hut foundations) detected on known protohistoric surface sites, and show that settlement densities have been seriously underestimated. At the Monte San Nicola hilltop, a large-scale magnetometer survey on the silty soils of the Plio-Pleistocene marine terraces landscape (50-550m asl) resulted in a set of circular pit-like anomalies which, after an intensive fieldwalking survey, could be related to diffuse pottery of the Late Bronze Age / Early Iron Age. Now believed to be the partially ploughed-out remains of a cremation cemetery, the experiment has added a rare example of this site type. Finally, in the generally erodible upland valley at Contrada Madalena, where soils consist of schists and marls (700-1000m asl), large-scale on- and off-site magnetic gradiometry did not result in any archaeological features. However, some seemingly natural magnetic anomalies turned out to have a complex genesis which is still relevant to our understanding of the archaeological surface record. Besides these intensive geophysical studies, we also collected long transects of magnetic susceptibility measurements in all three landscape zones to determine the geological background and the potential for any anthropogenic and natural magnetic anomalies would be distinguishable. We discuss several examples of gridted and ungridded on-site MSS surveys to demonstrate the effect and implications of this approach.

- Oral

Remotely Visible? The Search for Communities within the Irish Landscape

More than 1,000 years on, early medieval ecclesiastical and secular sites are still clearly visible on the Irish landscape, marking the locations of long abandoned settlements. This complex period saw the introduction of Christianity to Ireland and resulted in dramatic changes to the landscape with the establishment of ecclesiastical sites of varying scales, and the appearance of enclosed agrarian settlements. Although the archaeological remains are abundant, many of these areas are now considered ‘ruin’, and are somewhat sparsely populated. This has benefited a remote sensing approach as aerial imagery and lidar have access to a relatively untouched landscape base. These techniques have made a substantial contribution to developing an understanding of the Irish landscape, and soils, and with potentially different archaeological records. In the sandy and gravelly soils of the foothill zone bordering on the coastal plain of Sybaris (100-400m asl), an exploratory swath of magnetic gradiometry across the already intensively fieldwalked agricultural area ‘Contrada Damale’ revealed evidence of anthropogenic features without associated surface artefact scatters. Some of these features have direct parallels with archaeologically relevant anomalies (hut foundations) detected on known protohistoric surface sites, and show that settlement densities have been seriously underestimated. At the Monte San Nicola hilltop, a large-scale magnetometer survey on the silty soils of the Plio-Pleistocene marine terraces landscape (50-550m asl) resulted in a set of circular pit-like anomalies which, after an intensive fieldwalking survey, could be related to diffuse pottery of the Late Bronze Age / Early Iron Age. Now believed to be the partially ploughed-out remains of a cremation cemetery, the experiment has added a rare example of this site type. Finally, in the generally erodible upland valley at Contrada Madalena, where soils consist of schists and marls (700-1000m asl), large-scale on- and off-site magnetic gradiometry did not result in any archaeological features. However, some seemingly natural magnetic anomalies turned out to have a complex genesis which is still relevant to our understanding of the archaeological surface record. Besides these intensive geophysical studies, we also collected long transects of magnetic susceptibility measurements in all three landscape zones to determine the geological background and the potential for any anthropogenic and natural magnetic anomalies would be distinguishable. We discuss several examples of gridted and ungridded on-site MSS surveys to demonstrate the effect and implications of this approach.

- Oral

Reevaluating the landscape of Lesser Poland.

This area is situated just south of the Varde Stream system and has drawn the majority of the archaeological attention. Now, the area data was disturbing, taking into consideration that there exists a direct connection to the Wadden Sea through Ho Bay. The area of new sites. These new sites have changed, and continue to change, the understanding of past landscapes.

- Oral
One interesting feature of the 15 settlements along the Varde Stream system mainly links to an almost preplanned structure. The settlements are situated along the stream with approximately 1 km of distance between each other. This particular situation offers considerably from other areas in West Jutland where the settlements are situated more sporadically. The Varde stream settlements are located mainly on the north side of the meadows that runs along the stream and allows for a utilization of both the meadows and easy access to Ho Bay and the Wadden Sea. The settlements are registered mainly as pit-house crophouses, and a few display longhouses in combination with pit-houses. The pit-house is the common element, a feature that often is connected with crafts. The spatial location along the stream does seem to add to such propositions, but the interesting questions relate to factors of control and power. Did someone force this structure on the settlements or does the settlement location indicate a normalized resource area? Do the pit-house sites indicate settlements or do the sites represent a specialized function? These questions are of great importance for this particular period in the Danish prehistory, where it is theorized that the early steps towards state formation occur. These processes are often linked to the central places and the power we surmise they must have had due to exceptional material culture. Now, due to the aerial archaeological data, it might be possible to contribute to, or deconstruct, these assumptions.

TH5-06 Abstract 10
The 16th century In Depth Defenses of the Nissan River Valley Revealed by Remote Sensing
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Keywords: 16th century warfare, LIDAR, Remote sensing
Presentation Preference - Oral

In the late autumn of 1567, during the Nordic Seven Years War, a large Danish army crossed the border and marched into southern Sweden, wreaking havoc on the lands of the enemy. The outnumbered defenders were unable to offer any serious resistance for about a week, thus giving the invasion force free access to the Nissan River Valley – one of the main roads to central Sweden. From this perspective, the following year the extent of the catastrophe can be estimated. A whole region was devastated, its villages and farms appear as "plundered", "burned", "destroyed" or "laid waste" in the written sources. However, this could have been avoided. A well planned system for defense in depth was established before the war. Before the war, a fortification had been built in strategic positions along the river valley at a distance of about one day's march from each other. Used correctly, these simple fortifications would have slowed down an invader, wasting his strength while giving the defenders time to gather reinforcements. But due to a number of circumstances this did not happen in 1567. Instead the unfortunate peasants got in harm's way.

The remains of these defenses and their historical importance went almost unnoticed until recently. The research project Getarygen 1567 broadened its scope after having located and investigated a battlefield from the conflict. By using combination of written sources, LIDAR surveys, LR and GPR it has been possible to trace both the preparations made by the Swedish forces and the tracks of the Danish army. Careful analysis of LIDAR data explains why certain sites were chosen as defensive positions or used for temporary camps. It has proven to be the most effective method for mapping settlements that vanished during the events 450 years ago. The importance of remote sensing for the Getarygen 1567 project cannot be overstated. In a densely forested landscape, very different from what it looked like in the mid-16th century, modern techniques have made it possible to investigate a military campaign and even interpret its consequences. By doing so, we can begin to understand the true conditions of the local population in a border region. People that were subject to recurring warfare and suffering, with a situation too many parallels to our own time!

TH5-06 Abstract 11
Above and below the surface.
The use of Remote Sensing in studying the former battlescape
Author - Michal, Jakubczak, Polish Academy of Sciences, Warszawa, Poland
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Keywords: Central Poland, Great War, Remote sensing
Presentation Preference - Oral

"Archaeological revival of memory of the Great War. Material remains of the life and death in trenches of the Eastern Front and the condition of the ever changing battlescape in the region of the Flawka and Bzura" is the scientific project, which reveals that archaeological revival of memory can be extremely useful in reflecting also recent tragic episodes in the history of human and landscape entanglement. Three seasons of research made us realize how little is known about the material dimension of the Eastern Front of the Great War, despite numerous written sources. In our presentation we will focus on showing the ways in which the Advanced Remote Sensing Techniques can reveal the enormous amount of information as well about soldiers who found themselves in trenches of Great War and local communities touched by that war as things and landscapes. We will try to expose, the fact, that archaeological methods including advanced remote sensing techniques are adequate and universal - regardless of whether they relate to material remains of Paleolithic hunter or last century soldier's activities – only as long as they are driven by the relevant question. Without it, we never get a relevant answer. The area of our field of research covers over 300 km². Our practices have enabled us so far to produce the questions which can give us an insight into the ways in which the fellowships and clashes of the soldiers, their lives and deaths, influenced the analyzed landscape between 1914 and 1919. We will present the detailed results of archaeological research on selected sites related to Great War and recognized via aerial photography, LiDAR and geophysical surveys. By showing the cemeteries and remains of no man's land in two different conditions - well preserved in woodland and destroyed by agriculture – we will elucidated the problem of matching the particular Remote Sensing Technique to particular environmental conditions and b/ necessity of enriching the traditional methods of excavations with Advanced Remote Sensing Techniques in order to gain a chance for more complete and complex understanding of ever changing landscape.

TH5-06 Abstract 12
3D Photogrammetry/Videogrammetry in Underwater and Aerial Archaeology
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Keywords: 3D Reconstruction, Structure from Motion, Videogrammetry
Presentation Preference - Oral

Over the past few years, 3D reconstruction from images series (photogrammetry) or video streams (videogrammetry), using robust and fast software tools such as Structure from Motion (SFM) and Multi-View Stereo (MVS), has emerged as a dominant technique in archaeology. The usefulness of these tools is not limited to capturing digital models of single objects or (in combination with aquatic archaeology) Underwater Vehicles(UAVs) documenting complete sites and excavation areas. Image-based 3D reconstruction is also a key technique for supporting processes of interpretation and decision making during ongoing field work. In addition, the use of photogrammetric solutions in Underwater Archaeology, using Unmanned Underwater Vehicles(UUVs) will be an important step for archaeological research in flat areas and coastal transition zones that currently constitute some of the most sparsely documented regions of archaeological interest. However, as the volumes of 3D data increase, best-practice and efficient workflows move into focus, as do staff training and access to low-cost, low-cost technology. Traditionally working under constraints of strictly limited time and financial resources, archaeologists are prone to turning off the shelf hardware and free and open source software for data processing. Our contribution will show-case several international case studies that demonstrate how low-cost UAVs/UUVs, free software and well-designed workflows combine to enable archaeologists to capture monuments, sites or entire landscapes from the air and underwater. Our technological focus is on the innovative transition from high-resolution, single-shot imagery to using large numbers of frames extracted from video streams. Despite the lower resolution of the latter, we believe them to be an ideal source of data for robust 3D reconstruction, due to superior recording speed and frame overlap.

TH5-06 Abstract 13
Digging into the Swiss Neolithic with Modern Methods – 3D Documentation and Biochemical Analyses
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Keywords: 3D documentation, biochemical analysis, Neolithic
Presentation Preference - Oral

Switzerland is known for the well-studied settlement archaeology of the Neolithic period however up to now little is known about the population who inhabited those settlements. With the recent finding of a Neolithic dolmen near Bern a unique opportunity was provided to study Neolithic human remains. The project therefore focuses on dietary habits, migration and population dynamics and includes human remains of further Neolithic sites in Switzerland.
Since such exceptional findings have high scientific potential it is of great interest for an interdisciplinary project. Photogrammetry and 3D scanning were used as the documentation method at the excavation and allowed quick and detailed drawings of scaled plans. To keep the contamination of human remains as low as possible the excavators used various protection equipment.

The human remains are morphologically analysed, the minimal number of individuals is calculated, stable isotope analyses of the isotopes carbon, nitrogen, sulphur, oxygen, hydrogen, strontium and lead will be performed in order to investigate the dietary habits, possible migration patterns and climatic conditions of this time. Furthermore, the ancient DNA will be investigated for population genetics and also to gather information about phenotype and genetic relationships.

Radiocarbon dating will be performed to shed light on the chronology of the burials. First radiocarbon dates indicate that the dolmen was used from around the second half of the 4th millennium BC. This falls within the two big migration and admixing events of Neolithic Europe. So far little is known about the population at the time of the dolmen. Additionally the geography in the alpine region makes it an important source for migration studies since migration routes are limited in the alpine region.

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**TH5-06 Abstract 14**

**A view from above: GIS and LIDAR vs. trowels and spades**

**Author:** PhD student Daubara, Mantas, Lithuanian Institute of History, Vilnius, Lithuania (Presenting author)

**Keywords:** GIS, landscape archaeology, LIDAR

**Presentation Preference:** Poster

An ongoing research project focused on Varniai region (eastern Lithuania) is working towards understanding the use of prehistoric (Mesolithic, Neolithic, Early Medieval) landscapes in this area of 274 km². The approach for surveying for new sites has been employed by means of GIS and LIDAR modelling as well as actual excavations. Here we present primary results of this endeavor as well as shortfalls of GIS and LIDAR modelling if it isn’t used together with an actual archaeological fieldwork.

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**TH5-06 Abstract 15**

**Unique burials found in the ancient necropolises in Crimea with the magnetic survey in 2014-2015**

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**Keywords:** late Scythians, burial items, gold jewelry, magnetic survey, North-Western Crimea, ancient necropolis

**Presentation Preference:** Poster

Excavations of the necropolises are extremely important for understanding the synchronous with the graves historical processes. The funerary objects, visible on the surface, in most cases repeatedly robbed. Situation with underground cemeteries, which are not visible on the surface, is different. Although they, too, went looting extensively in Crimea, but the invisibility of these objects, to some extent, protects them from robbers. But for the same reason they are difficult to detect for archaeologists too. One of the search options to such objects is the use of magnetic survey.

In 2014-2015 gg. researchers from Tula and Simferopol have carried out magnetic survey at several cemeteries of the Western Crimea. Excavations of the anomalies have revealed burials, which was not robbed, or, at least, not robbed in modern times.

In the necropolis of the settlement Djan-Baba studied three not robbed ground children’s graves with a variety of implements and unique family stone crypt with numerous graves of 1 c. BC. It was found numerous burial items, among which glass, pottery red lacquer and stucco vessels, more than 3 thousand of different types of beads, many iron objects and their fragments. Wares made of bronze and white metal are presented by coin and various ornaments, including fibulae, some of which are very rare in the Northern Black Sea. It also was found one hundred and eleven small gold items of women’s dresses decor, as well as fragments of gold foil. The burial belonged probably to a woman of noble birth (priestess?). In her, perhaps, connected the specific cult vessels - stucco iconography, large non-Black Sea sink, numerous gold objects painting dressing, pendants, rings.

Another not robbed crypt was discovered in the necropolis of the ancient settlement Kulyuch. In the chamber of the crypt detected 8 adults burials, arranged in two tiers one above the other. The later burial of the upper tier are made in a stretched position on the back with a different position of the limbs. One burial was in a coffin, which is partially preserved the contours of wood decay and iron nails. Upper burial overlap the lower tier, which lay on the floor of the tomb chamber. Of these, in relative anatomical order remained only one skeleton, and the rest were in a fragmented state.

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**TH5-06 Abstract 16**

**Innovations in hardware and software for high resolution geophysical surveys**

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**Keywords:** Data processing, Geophysical prospection, Open source GIS

**Presentation Preference:** Poster

Among the many types of sensors available for geophysical surveys, gradiometers, used to detect minute fluctuations in the Earth’s natural magnetic field caused by buried objects and structures, have established themselves as a particularly robust and efficient technology. Our contribution showcases state of the art gradiometer hardware, consisting of multi-sensor arrays of gradiometers, and its application in the fast and detailed prospection of large sites and areas of interest. Advances in sensor design and electrical shielding allow for extremely close spacing of gradiometers and achieve a data density that rivals that of LI-DAR. Highly integrated sensors deliver positional and inertial (velocity and rotation) data in addition to the gradiometer readings. These can be used to derive secondary data products, most importantly accurate and high resolution digital elevation models (DEMs). In looking for a solution to process the millions of data points produced by our hardware setup, we found that existing software packages were not capable of the high performance and lossless operation required for developing our own solution in open source GIS, leveraging the flexibility and standards compatibility of that platform. The toolset we developed and integrated into GIS includes highly optimized tools for data import, error correction and interpolation. In summary, our integrated hardware and software solution allows for fast and cost-effective geophysical prospection at extremely high resolution with all data processing done transparently in open source GIS.
to the west). These data have already expanded our understanding of socioeconomic developments in the Tavoliere during the new way of life of the early Neolithict.

In 2015, in order to select sites for future excavation, advanced remote sensing was conducted in order to assess the precise location and preservation of the prehistoric ditches, considering the potential damage caused by modern deep-powling since the original aerial photographs were taken. A remote-controlled unmanned aerial vehicle (UAV) and ground-level magnetometry/ electrical resistance tomography were used at several sites following the harvesting of the fields. A fixed wing SenseFly eBee UAV was used to create near-infrared (NIR) imagery at four sites: two around Lucera in the northwest of the Tavoliere, one near Foggia in the center, and one in the southwest near Cerignola. Photogrammetry produced a high-resolution (10 cm/pixel) digital terrain model. The magnetometer was used in transects of 20 x 160 m at two of these sites (Posta Barone Grella in the south, Posta del Ghiaccio in the north), and was highly successful in showing both boundary ditches and internal structures. Additional remote sensing is planned, potentially at different times of the year and prior to harvesting to identify optimal conditions for its use in subsurface site prospection.

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THS-06 Abstract 18

Geophysical and Archaeological research on Late Roman iron-smelting site at Virje (Croatia)

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Presentation Preference: Poster

Archaeological site Virje is situated in the Croatian lowland, on the right bank of the upper course of Drava river. On a slightly sloped area named Šušine, parts of a primary iron processing melting workshops were discovered and explored. Since these types of sites are quite rare in northern parts of Croatia, and in order to get a better understanding of the development of the site, noninvasive methods were applied. With the help of magnetic method, measurements of magnetic susceptibility and shallow drilling, waste disposals of a workshop, few pit furnaces from the Late Roman period (4th and 5th century), as well as settlement remains from Late Iron Age (3./2. and 1st century BC) were discovered. Additionally, geophysical results applied on digital elevation model in combination with aerial photography were carefully analyzed and compared with excavated archaeological structures. All the gathered information importantly contributed and changed our views on this unique multi-periodical site and its environment.

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THS-07 Abstract 01

Multilevel approaches to dietary reconstruction in Anglo-Saxon to Medieval UK

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Keywords: dental calculus, diet, health

This presentation focuses on the use of complementary methods for dietary reconstruction in a number of Early to Late Medieval assemblages from Leicestershire and Rutland, in the East Midlands, UK. These methods include the macroscopic analysis of dental wear in the anterior and posterior dentition employing estimates of the area of exposed dentine on the occlusal surface of all teeth, as well as microscopic analysis of the dietary debris embedded in dental calculus deposits (mineralised dental plaque). Such a combination of techniques has rarely been applied to date, and never before in the region examined. These assemblages were selected because dietary reconstructions, especially for the Early Medieval period, are a primary area of interest highlighted by the Archaeology Research Agenda for the region.

The Early Medieval material under study dates to 500-900 AD c. and originates in the Anglo-Saxon cemeteries of Empingham and Rothley, while the Late Medieval material dates to 1250-1450 AD and originates in the cemeteries of St. Michael’s and...
St Peter’s, located in the North East quarter of Medieval Leicester. The individuals selected for this study belonged to different social groups, the elite and the poor, offering a unique perspective on social differences in food quality. The bioarchaeological methods in the study of dietary patterns in this material offer much greater resolution than any of these methods used in isolation. In specific, macroscopic dental wear provides an overall picture of the wear accumulated on the teeth throughout the life of the individual, and its degree and pattern (bilateral asymmetry, differential expression in the anterior versus posterior dentition) can provide insights into the intrinsic toughness of the food consumed as well as the extent of food processing. However, this method cannot provide direct information on the actual foodstuffs that entered the mouth. The analysis of dental calculus dietary microdebris can fill in this gap, since dental calculus constitutes a primary depositional environment within the mouth and provides evidence of the exact foodstuffs that entered the mouth and provide insights into the compositional parts of the worn teeth.

The combination of the above methods offered important insights to the evolution of diet from the Anglo-Saxon to the medieval period as well as to social differentiations during medieval times. Coupled with historical evidence and archaeological information derived from the material cultural remains, the proposed multidisciplinary bioarchaeological approach has the potential to enrich our understanding of past dietary patterns by elucidating complementary trends at the macroscopic and the microscopic level.

**TH5-07 Abstract 03**

**Non-Destructive Trace Element Analysis of Human Bones to Examine Diet and Mobility**

**Author:** Prof. Tjokt, Robert, University of South Florida, Odessa, United States of America (Presenting author)

**Keywords:** ancient diet, bone chemistry, elemental analysis

**Presentation Preference:** Oral

The theoretical basis for elemental analysis of human bone to study diet and mobility is well-established, yet until recently the number of studies done is few and far between. Instead, analyses of carbon, nitrogen, oxygen, and strontium isotope analysis have dominated “bone chemistry” studies over the last 25 years. Nevertheless, elemental analysis of calcium (Ca), iron (Fe), barium (Ba), strontium (Sr), lead (Pb), zinc (Zn), arsenic (As) and other elements can support and supplement isotope-based interpretations, and be of significant use in cases where bone collagen is not preserved. Elemental analysis, however, has potentially greater concerns than isotope studies, due to degradation and contamination of the mineral portion of bone. Also, most previous elemental studies have been just as destructive, with samples well-cleaned, ashed, and put into solution for analysis by ICP spectrometry. Over the last decade, however, non-destructive field-portable and handheld X-ray fluorescence (XRF) spectrometers have become widely available to bioarchaeologists. While now regularly used for trace element analysis of obsidian and other lithics, and major element composition of metals, it appears potentially useful for studies of skeletal remains as well. In the United States and other countries, isotopic analyses of skeletal remains has become increasingly difficult, and for that reason experimental studies have been conducted using the pXRF on its precision and the heterogeneity of bone surfaces versus interior, along with analyses on more than 1000 individuals from archaeological sites in Europe and the Americas. One of the studies done was on individuals from inland and coastal sites in Florida. The small amounts of variability among individuals at each site suggest little contamination, while the clear differences between the sites are most likely due to varying proportions of seafood in the diet.

In conclusion, this multi-disciplinary study compares human osteological results with dietary and nutritional interpretations made about the dietary importance of maize, milt, and aquatic resources with patterns based on sex and status. Overall, the precision of the pXRF on most elements of interest is excellent; a separate issue however is the calibration of the raw data produced and whether the results may be compared with studies done by ICP spectrometry. Further studies are being conducted on tooth enamel and roots, to test whether non-destructive analysis may be reliable for assessing childhood diets. The reliability and utility of this method of elemental analysis of skeletal remains to study ancient diets will be discussed.

**TH5-07 Abstract 05**

**In sickness and in health. A community in death from a Neolithic Megalithic tomb (La Mina, Spain)**

**Author:** Rindlsbacher, Laura, Integrative Prehistory and Scientific Archaeology, Basel, Switzerland (Presenting author)

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**Presentation Preference:** Oral

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**Presentation Preference:** Oral

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**Presentation Preference:** Oral
The Megalithic tomb of La Mina (Aucibilla de las Peñas, Soria), dating to 3890-3660 BC, is unique among the passage graves of the Iberian Peninsula. After the communal burial chamber had been sealed, the structure was dismantled, dismantled yet monumentalized, thus becoming both a ceremonial site and terrestrial landmark. The tomb and its artefacts, faunal and human remains are in the focus of ongoing investigations focusing on cultural, social as well as bioarchaeological issues including DNA analyses (Rojo Guerra et al., 2015; Haak et al., 2015). The human skeletal remains (MN=20) were commingled and highly fragmented due to the postburial remodeling, yet the osteological analyses still revealed decisive insights into the former community (Rindlisbacher, 2015).

Neolithic megalithic tombs in Spain and other European regions hold only a select group of individuals from among the communities that built them. In La Mina, it becomes apparent that the life courses as well as the social status of the individuals had an impact on the decision whether or not someone was to be buried in the communal megalithic chamber. Different demographic profiles emerge for the women and men buried there, hinting at separate social roles between the sexes. There is evidence that individual health or resilience after severe trauma might also have had an influence on the selection. Especially intriguing are the distinct patterns of deficiency as well as the traces of infectious diseases which again vary between the sexes. The combined study of the demographic profile, pathologies, d13C and the dietary data obtained in an ongoing stable isotope analysis will allow unique insights into the life histories and the health status of the societies represented in the communal monument of La Mina and widen our understanding of such sites in general. The full potential of investigations concerning past communities can only be obtained by an integrative approach encompassing archaeology, physical anthropology as well as further bioarchaeological procedures which will still continue for the Megalithic tomb of La Mina.

References:
Rojo Guerra, M., Garrido-Peña, R., Tadeo-Rodríguez, C., García-Martínez de Lagran, I. & Alt, K.W. (2015). El tiempo y los ritos en Olbriox-sur-Amby, Isere, France; 6th - 8th centuries A.D., and (2) to reclaim a place for women in the past and to better know their role in this society. In this paper I will attempt to provide information on the trajectory of gender-specific inequality in different regions of Europe in ancient times compared to pre-historic and later centuries. In order to do this I compiled 9 observations from 8 to 14th century CE for the two genders. Differences in the two genders, observed from the buried population of the cemetery Larina le Mollard (Hi

TH5-07 Abstract 06
A Relationship between Diet and Burial Rite at Neolithic Oslonki 1: d13C and d15N studies
Author - Dr. Budd, Chelsea, Brunwood, UK (Presenting author)
Co-author(s) - Bogucki, Peter, Princeton University, New Jersey, United States of America
Keywords: Neolithic Diet, Stable Isotope Analysis, Status Burials

TH5-07 Abstract 08
Gender and diet: experimental study in bioanthropology
(these of the case of Larina, France)
Author - Batista-Goulart, Luana, CEPAM - Universidade de Nice Antipolis, Nice, France (Presenting author)
Co-author(s) - Segio, Isabella, ISED and CEPAM, Nice, France
Keywords: dental microwear, diet, gender bioanthropology

In the context of gender approach, we conduct an experimental study about the diet of women and men inside the same society. Previous works have shown that, sometimes, in past populations, women and men did not have access to the same kind and same quantity of food. Thus, the aims of our research are (1) to recognize if there is any difference in food consumption between the two genders, observed from the buried population of the cemetery Larina le Mollard (Hélas-sur-Amby, Isère, France; 6th - 8th centuries A.D.), and (2) to reclaim a place for women in the past and to better know their role in this society.

To conduct this study we analyze dental microwear from a sample of exhumed skeletons. During the mastication, different types of food leave different kind of marks on the teeth's surface. Microwear analysis method has been used in a previous research to conduct the diet of two different social groups from the Larina site, but not to compare the two genders. Subsequently, our
research compares the microwear found on women and men's teeth in order to infer if they had the same kind of food. This study is currently being conducted, and we will present its first results in the conference.

**TH5-07 Abstract 09**

**Fish 'n' Picts: Reconstructing diet in early Medieval Scotland using stable isotope analysis**

**Author:** Kate, Britton, Aberdeen, United Kingdom (Presenting author)

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**Keywords:** early Medieval, Picts, Stable isotopes

**Presentation Preference:** Oral

First mentioned in late Roman writings as troublesome tribal groupings north of the Roman frontier, the Picts went on to become the first kingdoms in eastern Scotland in the post-Roman period. Although contemporary archaeological investigations are unearthing important new information about the Picts, many aspects of the Pictish past remain elusive. Given the dearth of historical sources and current lack of Pictish domestic sites and animal bone assemblages, very little is known about many economic and social aspects of Pictish life - such as diet. The stable isotope analysis of bone collagen is useful as a means of assessing past dietary habits, particularly the relative contribution of marine and terrestrial protein to the diet. These techniques also have the potential to investigate dietary variations within groups, such as between different biological sexes or burial types.

Here, we present carbon and nitrogen isotope data from bone collagen from a number of Pictish burials and cemeteries, providing novel insights into Pictish lifeways. Data generated are compared to limited previously-published Pictish datasets and to data from other contemporary archaeological British groups. Results suggest limited intra-group dietary variability, and a relatively homogeneous diet across the areas studied. Marine fish consumption is low relative to later Medieval and Viking sites in Scotland, and in comparison to contemporary Romano-British samples, but similar to data derived from Anglo-Saxon sites. The conceptual role and importance of fish, rivers and other water bodies to the Picts is also briefly explored (particularly with regards to the positioning of cemetery sites, and the depiction of fish on Clava I stonecist).

**TH5-07 Abstract 10**

**Regional differences in subsistence economy in 16-19th c.c. Lithuania: stable isotope evidence**

**Author:** Skiptys, Raminta, Nature research centre, Vilnius, Lithuania (Presenting author)

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**Keywords:** diet, stable isotope

**Presentation Preference:** Oral

Stable isotope analysis is now a "golden standard" for studying variations in the past diet and life history. Previous studies performed in medieval Lithuania have shown that the human protein intake was mostly derived from C3 plants and C3 feeding animals and possibly some freshwater resources with little variation among young and adult individuals (Whitmore et al., 2014). In this study, stable isotope analysis of human skeletons from different populations representing various regions of Lithuania (16-19th c.c.) was performed. To track dietary evidences, animal bone samples from similar places and time period were analysed as well. The results showed significant differences in stable nitrogen isotope ratios between coastal, urban and inland site communities, meanwhile, the carbon stable isotope ratios were less variable and showed a strong dependence on the C3 plant environment. Different strategies in subsistence economy could shape the stable isotope signals in these communities. Peasants communities, meanwhile, the carbon stable isotope ratios were less variable and showed a strong dependence on the C3 plant environment. Furthermore, comparisons were drawn with several Irish and continental European populations from the early medieval to the early modern period which allowed for placing Rathfarnham into a wider temporal and geographical context.

These studies have shown that the population from Rathfarnham was an ordinary early medieval Irish population in which males and females were assigned to different physical works like in other early medieval Irish and continental European populations (Friberg, 2010, 123 and 128; Novak et al., 2012, 446; Novak, pers. comm.). The diet of the population was mainly terrestrial one which was typical for the period (Kelly, 2000, 316 and 322; Friberg, 2010, 127; Lahane and Delaney, 2010, 46; Novak, 2015, 1304). However, different occurrences of the dental pathologies (dental caries, dental calculus and ante-mortem tooth loss) between the sexes probably indicate slight dietary differences between males and females. The females could have consumed more cariogenic food such as carbohydrates than the males whose diet might have had a stronger protein basis, likewise observed in a composite early medieval Irish population (Novak, 2015, 1299).

In comparison to populations in continental Europe the Irish sample showed a mostly lower caries but a higher dental calculus frequency. This combination of the two pathologies would, according to Šlaus et al. (2011, 588), usually indicate a protein-rich diet. As a result this could reflect a higher significance of dairy products in the Irish diet when compared to continental Europe.

In both, Ireland and continental Europe different frequencies of Schmorl's nodes in males and females probably indicate a specific allocation of physical labour between the sexes (Šlaus, 2000, 256; Friberg, 2010, 128; Novak et al., 2012, 446; Novak, pers. comm.). From the analysis of vertebral osteophytosis it could be concluded that this pathology is rather related to biological conditions such as body stature, weight and age but no reliable skeletal indicator of physical workload (Van der Meer et al., 2006, 482; Weis and Junman, 2007, 439). The low occurrence of trauma in the Rathfarnham population probably indicates a relatively peaceful life in which fractures occurred occasionally as a result of accidents and in which trepanation was practiced. Author: Alka Katharina Diasch (best student of the MA in Archaeology, University College Dublin, year 2014-2015)

**Full title of MA Thesis:** An Osteoarchaeological Study of Health in the Early Medieval Population from Rathfarnham, Dublin (97E0440 - A Comparison of the Dental and Skeletal Indicators and Historical Sources

**TH5-07 Abstract 12**

**A condition overlooked: the importance of interdisciplinary methods in investigating diet and health**

**Author:** Nelson, Elizabeth, Max Planck Institute for the Science of Human History, Jena, Germany (Presenting author)

**Co-author(s):** Halling, Christine, Louisiana Dept of Justice, Baton Rouge, United States of America

**Co-author(s):** Dr. Buikstra, Jane, Arizona State University, Tempe, United States of America

**Keywords:** Diet, Fluoride, Paleopathology

**Presentation Preference:** Oral

Diet is a key factor in the health of individuals and of communities, both ancient and modern. In studies of ancient health, termed paleopathology, most paleodiet researchers have focused on estimates of the nutritional quality of diet across distinctive periods, comparing evaluating quality of life across space and time. Health, however, can also be affected by environmental diet factors, including toxic or deficient levels of minerals. We emphasize the importance of rigorous differential diagnosis in paleopathology and the multiplicity of factors that may influence an individual's response to environmental stressors. Our research develops from observations of pathology in remains from the Ray site, a 2000 year old Middle Woodland cemetery from west-central Illinois, USA. Using a previously developed differential diagnosis for an environmental condition, wherein an abundance of fluoride placed people at risk for poor health, we illustrate the importance of linking environmental, dietary, epidemiological, and physiological factors in developing a well-supported differential diagnosis. We also consider directions for future studies that link molecular biology, geo-chemical and isotopic analysis to knowledge of past fluoride toxicity.
This talk is the result of research as part of a doctorate focusing on examining the dietary habits of several Early Bronze Age (3000-2000 BC) populations in Anatolia. The investigated sites are from different environmental regions and consist of Bitiktepe (north Anatolia, Samos region, on the Black Sea coast), Tilh Höyük (south east Anatolia, Uşfa region), Badmagac (south Anatolia, Antalya region), and Bairka Tepe (west south Anatolia, Ilim region). This research is incredibly significant as it is the first time that quantitative scientific methods have been used to address questions and hypotheses about dietary habits in the EBA period of Anatolia. It is the first time that statistically relevant and valid results have been communicated, and it is the first project of its kind both in terms of methodology and scale. Analysis of carbon and nitrogen stable isotopes (δ13C and δ15N) was employed on bone collagen from ca. 200 human and faunal osteological samples taken from the Anthropology Lab of Hacettepe University, Ankara Turkey, and was conducted at the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany. The research is a bioarchaeological one and therefore it utilises stable isotope analyses in conjunction with osteological and archaeological evidence and research to place the dietary habits of these populations within a wider framework. For example, during the Early Bronze Age (EBA) in Anatolia, and especially between the early and late EBA, dramatic changes are seen in architecture, burial habits, and social and socio-political structure including the organisation of urban settlements, resources, food, labour, and trade. There is also an increased incidence of peri-mortem cranial traumatic injuries which are indicative of an increase in interpersonal conflict and arguably an increase in organised violence during the period. This is furthered by the building of fortifications and burnt layers at many EBA settlements in Anatolia. Despite the substantial social and socio-political changes during the period, the results show that during the EBA in Anatolia there is a significant degree of homogeneity in dietary habits both at an intra- and inter-site and regional level, and across the millennium of the EBA within a C3 based. Furthermore, the results suggest that we can now begin to discuss an ‘EBA package’ with regards to foods resources.

TH5-07 Abstract 16
Diet and identities in a mining community, Sweden - documents and isotopes
Author - PhD student Bäckström, Ylva, Lund University, Löttorp, Sweden (Presenting author)
Co-author(s) - Dr. Britton, K., King’s College, Aberdeen University, Aberdeen, Scotland, United Kingdom
Co-author(s) - Dr. Ingvarsson-Sundström, A., Museum Gustavianum, Uppsala University, Uppsala, Sweden
Co-author(s) - PhD student Fjellström, M., Stockholm University, Stockholm, Sweden
Keywords: dietary patterns, the Reformation, late medieval-early modern, identities, Salberget mining community, Uppsala Cathedral
Presentation Preference - Poster
What distinguishes the diet in late medieval and early modern society from today was a profound influence by religion and ideas about the body. During the 16th century, the Reformation brought forward a new dietary regime which probably neither easy nor fast, and it took some time for people to adjust to this new regime. In this paper, isotopes (stable nitrogen and carbon isotopes in collagen) and documentary sources are presented, and intra- and inter-population comparisons are made, to investigate this dietary shift and the influence of group identities on diet.

TH5-07 Abstract 17
On the Diet of the Urals Population of the Great Migration Epoch
Author - Prof. Matveeva, Natalia, Tyumen state university, Tyumen, Russian Federation (Presenting author)
Co-author(s) - Chemical analysis results of skeleton composition
Keywords: chemical analysis results of skeleton composition
Presentation Preference - Poster
This report proceeds the author’s works studying the bone chemical composition of individuals from Sargatka culture ancient graves of the forest-steppe of Western Siberia. Recently we have analyzed data on the population inhabiting in late Early Middle age epoch, in particular the disintegration period of the Sargatka culture using the uniform methods.

The chemical analysis results of skeleton composition (50 individuals) came from Ustuy-1 burial complex and were dated as later ones, although it was from the Trans-Ural region of forest- steppe zone as well. We examined the materials of 19 kurgans of the Tobol basin, Tyumen region, which were dated by 14N centurias AD. The site was determined as one of being of population formation of Bakalakaya culture and time of assimilation of Khranevokt, Sarkhata, Kashno, Karim culture groups and Middle Asia genesis group. The fact of the assimilation was based on the archaeological and anthropological sources. There are (heterogeneous) values of ash and basic 18 minerals (Ca, Mg, P, Fe, Mn, Zn, Sr, Cu, Ni, Cr, Cu, Pb, Mo) as markers of different data.

Macro- and microelement composition of bone substance of buried people is shown as mean of selection as a whole and separately for men and women, as well as for children groups. The statistic significant differences displayed in greater values of Zn, Cu for women and children. There was ascertainment of consistence with the past dietary traditions and the published data of culture of Sargatka, this lack of consistence was defined by nomadic food tradition of the people buried in Ustuy-1 cemetery. There was a suggested idea that there was a relatively good health of populations from the point of view of mineral balance, based on comparison with modern medical data. We can suppose, that some individuals used stagnant water and wore copper decor (jewelry, clothing elements, have used copper cookware) for a long time. The information on the migration of nomads from the steppe zone, which was extracted from archaeological sources, was confirmed by chemical data.
**TH5-10**

**GEOARCHAEOLOGY OF PREHISTORIC SETTLEMENTS: NEW INSIGHTS INTO USE OF SPACE, DWELLINGS, HOUSEHOLD ACTIVITIES AND LAND USE**

Friday, 2 September 2016, 09:00-16:00
Faculty of Philology, Room 92

**AUTHOR**

Presenter: Julia Wattez, INRAP, Paris, France
Co-author(s): Marylise Onfray, Université Paris I, Paris, France
Co-author(s): Fiesseum, David, McDonald Institute for Archaeological Research, University of Cambridge, Cambridge, United Kingdom
Co-author(s): Pemcir, Alessandro, Università di Bologna, Bologna, Italy

**KEYWORDS:** geoarchaeology, prehistory, settlement

**PRESENTATION PREFERENCE:** Workshop

Many archaeological studies of prehistoric domestic contexts (i.e., Mesolithic, Neolithic and Early to Middle Bronze Age) focus still on the characterisation of occupation surfaces and structures, in order to understand the function of the site and its spatial organisation. Yet, the task of identifying and studying occupation surfaces and site stratigraphy in prehistoric contexts is very challenging. For instance, Neolithic sites demonstrate a large variability in their stratigraphy. Occupation surfaces are often weakly expressed, mainly characterized by the concentration and presence of artefacts, or not preserved at all, due to natural erosion or recent ploughing. In some cases, only negative features such as postholes, pits and ditches can be detected - for example among LBK longhouses or West European enclosures. The inflating of pits and ditches is generally related to dumping or to natural post-depositional processes while the function of the pits usually stays unknown (i.e. sunken-floor dwellings, silts, deep pits or silttriften). Multi-layered sites, characterised by massive accumulation of earthen building materials (i.e. mudbricks), such as the Balkan and Near Eastern tells raise a set of additional complications for understanding the stratigraphical record.

The geoarchaeological research sheds new light on these questions. By applying different approaches (i.e., geoarchaeology, stratigraphic analysis, micromorphology and geochemistry), geologists are able to identify cultural and natural formation processes and to evaluate the state of preservation of the archaeological record - site taphonomy.

The aim of this communication is to compare the first results of spatial analyses carried out on sites set either on plateau (site of Poupart) or on slope (site of Poussigny). The communication is to compare the first results of spatial analyses carried out on sites set either on plateau (site of Poupart) or on slope (site of Poussigny).

**TH5-10 Abstract 01**

**Investigating use of space:**

**Author:** Dr. Shillito, Lisa-Marie, Newcastle University, Newcastle, United Kingdom (Presenting author)

**KEYWORDS:** geoarchaeology, multi-proxy, use of space

**PRESENTATION PREFERENCE:** Oral

Many methods have been applied at Çatalhöyük World Heritage Site, including micromorphology, microartefact and geochemical analyses, and microfossils. Whilst interdisciplinary approaches have provided insights into use of space and activities, there is still a gap between macroscopic and micromorphological approaches. The purpose of this project is to provide an opportunity to highlight advantages and problems of different methods, and identify future directions for multiproxy approaches in archaeology.

**TH5-10 Abstract 02**

**They are still there! Identification and characterisation of Neolithic surfaces in Paris Basin**

**Author:** PhD Onfray, Marylise, UMR 8215-Trajectoires, Paris, France (Presenting author)

**Co-author(s):** Wattez, Julia, INRAP, Paris, France

**Co-author(s):** Demoule, Jean-Paul, UMR 8215-Trajectoires, Paris, France

**KEYWORDS:** Late Neolithic, Occupation surfaces, Soil micromorphology

**PRESENTATION PREFERENCE:** Oral

Late Neolithic soil occupation patterns in southern Parisian Basin are still not completely understood. In inhabited contexts, the characterisation of the architecture and the distribution of activity areas is really difficult. Few years ago, domestic sites were only known by few excavated sites. Nevertheless, very thin and massive anthropogenic layers were regularly discovered. These layers contain materials (potsherds and lithic fragments (flints)) which form more or less thick concentrations. They are located in different topographic positions: plateau, slope, bottom of the valley. The older are dated to the middle Neolithic and their number increases during the late Neolithic. They were judged as disturbed layers due to posterior erosion or modern ploughing but their real nature was not proved by extensive analysis. The question of their nature is still discussed: are they disturbed layers or preserved occupation surfaces? Until now, the second hypothesis was only suggested by the preservation degree and the spatial and stratigraphic repartitions of artefacts. Few geoarchaeological research were carried on this subject. Current research based on soil micromorphology lead to the identification of formation processes of these anthropogenic layers, using spatial samplings. It consists to sample in different points inside and outside the concentration of artefacts, in order to assess their nature in the sedimentary record. The micromorphological analysis shows that these layers are real preserved occupation surfaces. Moreover, they reflect different use of space which record several activity areas, inside or outside the buildings. The development of these occupation surfaces are highly influenced by the presence and the distance from the earthen area and the buildings.

The aim of this communication is to compare the first results of spatial analyses carried out on sites set either on plateau (site of Poupart) or on slope (site of Poussigny).

**TH5-10 Abstract 03**

**Building in the detail: micro-stratigraphies of Neolithic structures at the Ness of Brodgar, Orkney**

**Author:** Dr. McKenzie, J., University of Bradford, Bradford, United Kingdom (Presenting author)

**Co-author(s):** Card, University of the Highlands and Islands Archaeology Institute, Kirkwall, United Kingdom

**KEYWORDS:** micromorphology, occupation surfaces, site architecture

**PRESENTATION PREFERENCE:** Oral

Since 2004, excavations at the Ness of Brodgar, within the ‘Heart of Neolithic Orkney’ World Heritage Site, have revealed a large complex of monumental Neolithic structures spanning over a millennium of activity. These structures show evidence for complex biographies potentially reflecting both ritual and domestic activity. Excellent preservation of in-situ deposit sequences comprising occupation and surface layers are complemented by rich and complex artefact assemblages, unique artwork, and well-preserved suites of environmental material. An extensive and ongoing programme of micromorphological sampling has complemented the excavation strategy within the Ness of Brodgar structures, with the aim of addressing questions of building function and significance, settlement organisation, the use of interior space, and patterns of resource utilisation.

This paper presents the analysis of micromorphological sequences from two key structures currently under excavation: Structure 1 and Structure 8. These vary significantly in size, shape, internal layout, the depth and complexity of surviving deposits, and episodes of remodelling through time. Requiring two very different approaches to sampling, the resulting micromorphological sequences highlight the importance of detailed integration not only with excavation strategy, but also supporting geoaehaeological and environmental techniques. Structure 1 shows a very detailed and clearly defined sequence of interior deposits which provide a unique insight into the complex biography of a building which saw extensive remodelling through time. Here, the micromorphological sample set examines an extensive vertical sequence of in-situ deposits adjacent to the central point of the structure and its large monumental hearth. These span several episodes of carefully constructed surface which alternate with occupation related deposits rich in anthropogenic inclusions. Of particular interest is the changing composition of these surface constructions through time, and the potential relationship of this to internal layout and the remodelling of the building as a whole – do the compositions of these surfaces have a significance beyond the practical?

Contrasting with this is the sample set from the very different Structure 8. Over 18m long and featuring a large and diverse set of features such as cists, hearths, internal divisions and recess areas indicating potential specialist activities. Structure 8 shows a far thinner sequence of surviving internal deposits - the result of a short life span due to subsidence and collapse. This prompted a very different micromorphological sampling strategy. Individual samples precisely located at points of interest within and adjacent to not only key structural features, but locations referencing the interior geography of the building provide an opportunity to explore both the micromorph stratigraphy of specific areas within Structure 8, and the use of space within the building through time.

**TH5-10 Abstract 04**

**Canals fills archives: environment and water management in Sarazm (Tajikistan) during Bronze Age**

**Author:** PhD Student Cez, Lucie, University Panthéon-Sorbonne, Nanterre, France (Presenting author)

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**KEYWORDS:** Canals sedimentary fills, Geoarchaeology, Micromorphology

**PRESENTATION PREFERENCE:** Oral

Canals fills archives: environment and water management in Sarazm (Tajikistan) during Bronze Age

**TH5-10**

**Science and multidisciplinarity in archaeology**

532

533
Sedimentary accumulation in a canal reflects mostly anthropogenic process (runoff intensity control, water inflows rhythm, regular clearing) related to his function, especially in the case of an irrigation canal. Sedimentary accretion in open-air hydraulic structure is also marked by natural processes controlled by environmental conditions (hydrology, climate) at one point in time. As a result, sedimentary fills of canals provide high-resolution pedo-archaeological sequences for fine restitution of closely intervened socio-economic dynamics and paleo-environment. The restitution of the operating history of hydraulic structures as canals required a geoarchaeological approach based on all-scale analysis of their sedimentary archives of fills (stratigraphic sequences analysis, geomorphology, micromorphology of soils, OSL dating).

Such an approach led on exceptional and well-preserved archives of fossil canals of the northern edge of the archaeological site of Sbarim, which attest a proto-urban settlement during Chalcolithic and Early Bronze Age periods. The micromorphological study of Early Bronze Age canal (dated by OSL from 4.5 - 0.4 Ky) aims to research under polarizing microscope and identify pedo-archaeological and sedimentary diagnostics features relevant of: (1) anthropic process of water management linked to the canal building and operating, runoff implementation and maintenance; (2) natural process expressed by drying or freeze features reflecting local and micro-regional hydro-climatic conditions relating to semi-arid environment. Forward, the sequencing of these data allows a fine restitution of the operating dynamic of the hydraulic structure in the frame of environmental past conditions in the southeastern part of the river Po plain, in northern Italy. The preserved stratigraphy refers to the central phase of the Italian Middle Bronze Age (about 1550-1450 BC).

The presence of perishable dwellings, built with wood and earthen materials, that normally don’t leave clear traces except for post holes, make the comprehension of built spaces very difficult. In northern Italy, several types of dwellings – dating back to the 2nd millennium BC - are archaeologically documented. In order to understand the nature of the buildings and their relationship with courtyard spaces, a spatial geoarchaeological sampling has been carried out in the site. A first attempt, based on soil micromorphology, is here presented: both the inside and the outside of a presumed roofed space are sampled.

The analyses focus on the local pedoclimatic markers, on the trapping processes and on the provenance and nature of different soil components. The aims of these first observations are to recognize the presence of roofed spaces, to understand the real building of the building floors and, generally, of the dwellings; finally, they tend also to define the evolution of the building during its life.

In this way we can draw a “biography” of a single built space, useful to understand cultural architectural patterns, not always visible in the macroscopic archaeological record.

To date, more than 600’000 artefacts and 900’000 animal bones have been recovered, mostly from infilled storage or cellar pits. Numbering more than 500, these represent the most frequent archaeological structures in the settlement. Recent interdisciplinary investigations showed that the majority of the archaeological findings are associated with dark sediments which contain plenty of inorganic and organic components such as ashes, clays and burned bone fragments as well as charred plant remains and coprolite fragments. Those dark, calcareous sediments may clearly be addressed as “occupation layers” and form a major source of material used to fill in the settlement’s pits. Geoarchaeological investigations showed that the pits were infilled in a short time in the course of just one or two distinct events. Thus the question is raised as to how and where those dark sediments were formed before they were used as backfill.

This question will be addressed by means of micromorphological and geochemical analysis of well-preserved settlement structures like trampled soil surfaces, stone packings, shallow depressions, probable house floors, ditches and pits in order to characterize different activities and their corresponding sediments. Initial results show that there are significant differences in sediment compositions, associated anthropogenic contents and taphonomic proxies between features. Bone fragments, for example, show clear variations in preservation apparently correlated with specific archaeological features or postdepositional processes respectively. The geoarchaeological data will be supplemented by bioarchaeological and archaeological findings to get a comprehensive idea of the synthesis and post depositional processes at Basel-Gastfribk.

This will permit the reconstruction of waste disposal practices, activity areas and resource management, which is essential for interpreting assemblies like the inventory of an infilled pit. Without knowledge of how (prehistoric) communities handled their resources and their waste, of what happened with used or discarded materials, with accidentally or intentionally broken objects, with fuel and organic waste, with dung and human faeces, interpretations of archaeological features must remain mostly guesswork.

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Title: Geoarchaeological investigation of waste disposal practices at the Latène settlement Basel- Gastfabrik

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Keywords: Geoarchaeology, Iron Age, waste disposal practices
Presentation Preference - Oral

The late Iron Age settlement Basel-Gastfabrik is located in north-western Switzerland on the left bank of the Rhine River. Since 1911, numerous excavations revealed an unfilled settlement with domestic and economic structures covering an area of about 15000m², with associated cemeteries in short distance. Basel-Gastfabrik is among the largest, unfilled, proto-urban settlements playing a major role at the La Terre period and usually connected with trade and craft production, both of which also apply to Basel-Gastfabrik.

Metalworking is often considered only in terms of the primary technological processes involved, but is in fact a complex of processes taking place within a more or less well defined “room” or space. Instead of only focussing on what is going on within the “room” itself, it is therefore important to see metalworking as an embedded process within a larger or smaller workspace. The workspace can be defined as a building with solid walls, but may also be more undefined, or even a network of independent areas. A workshop might just be defined by the process as “the place where you sit down to work”,...
or by the room as seen in medieval buildings serving as multi-purpose workshops. The surrounding landscape and the social context of the “workshop” might also influence its organisation.

New methods of systematic sampling of workshop floors and working areas found at archaeological excavations, together with analysis of process waste, provide a picture of the physical organization of work within “workshop”. In this way the different processes going on in a workshop can be defined in detail, as well as the physical place which they take place. Even movements of the by-products between the different parts of the workshop might in some cases be visible, for instance charcoal, and the dragging of the smaller fractions of debris such as hammerscale, from the areas in which they originally have been deposited1. A number of examples ranging from the organisation of ore roasting and iron smelting sites in the Iron Age to medieval smithies are presented.


TH5-10 Abstract 09

Function, environment and dating of Mesolithic sites in Champagne: malacological answers

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Keywords: malacology, Mesolithic, palaeoenvironment

Presentation Preference - Oral

In the past two years, in Champagne (France), malacological investigations have been carried out in pits dated from Early Mesolithic to Late Neolithic. In 2014, at Rouilly-Saint-Loup Le Champ au Loup (Aube), a first analysis of three pits has led to assess the scope of malacological results in such structures. The results of this first exploratory study have prompted the pursuit of larger-scale investigations, in 2015, at Recy Le Parc de Référence (Marne), where malacological assemblages of about forty structures have been analysed. The presence of abundant malacological remains within the most structures demonstrates that they have been left open after their digging and then filled gradually by a natural accretion of sediment and organic material. In addition, the composition of the malacological assemblages of these two sites has enabled to reconstruct their environment and its evolution. All the studied structures have been dug in a forest environment but the proportions of the different molluscan species vary through time. The malacological successions found in Champagne are echoed in the malacological reference series dated from the first part of the Holocene in the Paris Basin and its margins. In light of these reference series, some radiocarbon dating from Rouilly-Saint-Loup and Recy are questioned.

TH5-10 Abstract 10

Humans and Early Holocene environment in southern Cyprus: The case of Klimonas (PPNA)

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Keywords: malacology, Mesolithic, palaeoenvironment

Presentation Preference - Oral

The site of Klimonas, in the district of Limassol in Cyprus, constitutes the most ancient human village in the island. Klimonas was settled at approximately 8800 cal BC (PPNA). Beyond the study of the site itself, Klimonas and its surroundings can provide much information on prehistoric human activities (pastoralism and mining activity) within the structures.

A series of on- and off-site samples were taken from different structures (enclosures and complex of huts/cabins) dated to PPNA, for instance charcoal, and the dragging of the smaller fractions of debris such as hammerscale, from the areas in which they originally have been deposited. A number of examples ranging from the organisation of ore roasting and iron smelting sites in the Iron Age to medieval smithies are presented.


This paper will present, in particular, results from XRF analyses, which reveal differences in phosphorus (P) content on and off site. We will also detail the ecological preferences of plants relative to the nutrient content on and off site. The presence of certain plants exclusively inside well-stratified structures demonstrates the influence of the past human activity (700 year ago) on these micro-socio-ecological systems. However, this “legacy effect” is not apparent on the Bronze Age (4200 years old) enclosure, which raise the question of the time required for the resilience. Another interesting result is the presence of lead at the Medieval period. These results support the assumption that the lead detected in soils from the medieval cabin is related with the medieval mining activity, the hut being probably used for (stocking and/or) metalurgical activities.

Keywords: domestic contexts, Late Prehistory, windthrows

Presentation Preference - Oral

Until the 80’s of the 20th century, the archaeological research from Neolithic to Bronze Age in NW Iberia was focused on burial sites and rock art. Since then, several research projects and rescue excavations brought new data on housing and domestic contexts at Late Prehistoric sites. Some of the Chalcolithic and Bronze Age open-air settlements studied, together with pits, post holes, hut floors and anthropic hedges, excavations have been recorded oval or circular hollows measuring 1.9 to 3.5 metres wide and 1 metre of depth, usually with an irregular section. These have been considered huts remains built on perishable materials. These structures were commonly filled with two different deposits; an organic and dark brownish layer, and another light and inorganic. From the organic deposits there has been recovered a high concentration of fungal sclerotia that have a symbiotic relationship with roots of trees or bushes. Finally, we would like to highlight that inside these openings are uncommon archaeobotanical evidences, such as charred tree roots or lithic artefacts.

The morphology of the huts and the lack of archaeological evidences related to these structures, together with the repeated absence of hearths inside them or in their immediate surroundings, lead us to question their anthropic origin. For that reason, new interpretations must be proposed. In fact, in terms of sedimentological events, there is a great similarity between these structures and natural features, such as wind-throw hollows (Dziegielewski 2007; Goldberg and Macphail 2006; Langohr 1993). The archaeobotanical assemblages recovered from these contexts, also can provide valuable information to interpret them as natural features and to understand the natural processes involved in their formation (Schiffer 1987).

There have been developed sedimentological and archaeological studies of samples recovered from holes related to tree wind-throws. Their results have been compared to the supposed anthropogenic contexts. The distinction between natural and anthropic features in these open-air contexts is crucial to avoid any interpretative distortions of these contexts.

References:


TH5-10 Abstract 14
At the Foot of the Cliff - exploring early human occupation of the inlands of southern Italy

Author - Dr. Van Leusen, Martijn, University of Groningen, Groningen, Netherlands (Presenting author)

In mountainous landscapes, strong landscape taphonomic processes going on for long periods, detecting and assessing the presence for prehistoric occupation can be very difficult. In this paper the authors, from the Universities of Groningen and Amsterdam (Netherlands), highlight occupation remains in a landscape context which is hard to investigate, but which also provides unique site preservation conditions: namely, debris slopes at the foot of steep limestone rock faces.

We present recently obtained results from the Rural Life in Protohistoric Italy project, which aims to develop improved approaches for the detection and study of ephemeral pre- and protohistoric remains in Mediterranean environments. The earliest settlement remains recorded in the basin of the Raganello River, our study area in Calabria, southern Italy, are located at the top of such debris slopes covering the foot of South- and East-facing limestone escarp. These results present as very dark, fine-grained deposits containing fragments of pottery, bone and charcoal interspersed with thin organic layers, which are difficult to detect in archaeological surface surveys due to the remoteness, extreme relief, ongoing deposition processes, and adverse vegetation. However, our multidisciplinary investigations (including soil studies, geoarchaeological prospection and high-resolution archaeological studies) show that such sites contain surprisingly well-preserved remains, including a wealth of environmental data on early subsistence strategies.

The paper focuses on these debris slope sites. Site RB12ta was initially exposed by quarrying activities, revealing deposits with pottery, bone, and charcoal, a surface survey of the wider area revealed several more protohistoric artefact scatters and at least two more ‘black earth’ deposits within the debris slope below the Timpa Sant’Angelo limestone cliff, indicating long-term use of the Middle Neolithic to Bronze Age. The second site, RB15a, is located in a similar South-facing debris slope, but is exposed by the incising gulley of a seasonal stream; the archaeological stratigraphy in the gulley section revealed deposits and materials from the Late Neolithic to Iron Age. At the third site, RB13oa, located in the debris slope East of the Timpa di San Lorenzo cliff, discovery was aided by erosion caused by goat and tourist trampling; we excavated a small test pit which yielded a surprisingly deep stratigraphy of 1.80m, with three distinct Middle Bronze Age phases. In this paper, we will show how we adapted our research strategy to investigate these three sites, focusing on their formation, on the well-preserved botanical and geological records indicative of early upland exploitation, and on the implications this has for our understanding of late pre- and protohistoric settlement and land use strategies in the Mediterranean uplands.

Keywords: geoarchaeology, geochemistry, hilltop settlement site

Presentation Preference - Oral

The archaeological settlement sites make a significant contribution to the picture of prehistoric communities. Yet, a clear and complete picture of the spatial layout of a site similar to those found in Great Britain or Denmark can hardly be found in the Baltic Sea region. A long history of cultivation has destroyed many shallowly buried structures, converting them into mixed cultural layer and then subsequently sweeping it from the previously delimited zones of activity. Most often, only amorphous negative features such as pits or ditches can be detected holding little or no archaeological artefacts, and for obvious reasons have not been of much interest to many archaeologists.

Therefore, in order to enhance knowledge on less apparent settlements, it is essential to integrate different methods and data. Recent studies indicate that analysis of geochemical and geophysical properties of sediments can be used to detect and understanding of human occupation beyond the archaeological remains. This is because anthropogenic activity alters natural sediments in recognizable ways and determines the formation of new soil characteristics that can be traced and measured through the multi-analytical methodology.

In this study an approach combining the data from broad-scale horizontal excavation and the results of the use of multi-element XRF, LOI, pH and MS analyses of archaeological sediments was chosen. The aim of the research was to verify the efficacy of the geoarchaeological approach for disturbed sites in discriminating archaeological contexts from non-contextual artefacts. These aspects were investigated as a part of scientific project “Geoarchaeological soil research as a means to investigate ancient settlement sites” financed by Lithuanian Scientific Board (MPI 101/2015).

Geoarchaeological research summarised in this presentation followed an archaeological excavation at hilltop archaeological site. Though the site was heavily disturbed, typo-chronological analysis of the material implies that the site was used as a settlement only during a single period at the beginning of the 1st millennium AD. This fact allowed for the application of geoarchaeological methods with minor risk of contamination with traces from other periods. Horizontal excavation revealed the distribution of the negative features at the subsoil level. However, functions and relationship with the overall spatial layout
remained undetermined for a big proportion of features due to complete absence of artefacts. Therefore, the essential tasks of geoarchaeological investigation was to trace anthropogenic criteria, if there were any. Multivariate statistics were performed for the 20 variables including element geoarchaeologically relevant concentrations of 16 metals, LOI, pH and MS values. Possible anthropogenic indicators were indicated. Although the data presented here are site-specific, there appeared to be a remarkable consistency in the suite of variables with those enhanced at sites of known context from different geographic areas and geological environments. Hence, this research demonstrated that, while it is indeed difficult to directly interpret chemical soil data in term of ancient human activity, it is possible to trace archaeology, even if there is no material evidence, and this is of great practical relevance to numerous sites of so far un-established archaeological value.

TH5-10 Abstract 16

Tracing the ditch from Zhabotin
Early Iron Age settlement (Ukraine) using magnetometry

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Keywords: Early Iron Age, magnetometry, settlement pattern

Presentation Preference - Oral

At the end of IX – beginning of XII century BC revolutionary changes occur in the Middle Dnieper area (Ukraine), relating to Chernyshskaya culture. All settlements and villages of Chernyshskaya culture, located mainly on the first and second terraces above the floodplain suddenly cease to exist. New settlements occur in a completely different topography, on the high areas of the watershed and the plateau. These are the settlement of the so-called Zhabotinsky phase distinguished after eponymous and reference Zhabotin settlement. New settlements also have a large area, from 10-20 to 100 hectares and are arranged in clusters. All of them have no visible fortifications, but they are located on the topographical plots, which provide natural protection, being surrounded, usually, on three sides by deep gulles.

New research carried out on Zhabotin settlement provided new information about its topography features and the defense system. In the central part of the settlement the ditch was revealed and partly excavated. The ditch divides the settlement with total area of 50 ha into two parts. The ditch was recognized from magnetic survey and traced along 180 m. Total depth of the ditch is 4.20 m. The ditch is observed from the depth 0.8-1 m. Its width on this level is not less than 10m, the width on the bottom is 1-1.2 m. The distribution of the ditch horizonts is recognized reflecting different stages of its functioning and filling. 

Archaeological excavations proved the infill to be consisted of separate layers, with characteristic magnetic susceptibility, indicating main chronological stages between 8th – beginning of 6th cent. BC. It is demonstrated that the magnetic anomaly over the ditch is formed mainly due to later building horizons. The width of the anomaly corresponds width of the ditch in the upper part (to the depth 2.30 m).

The ditch was laid on early but not the initial stage of settlement being, it had been preceded by earlier constructions. Archais constructions and complexes synchronous to ditch were observed on both sides of it. For this reason, it is of particular interest to the ditch controversy. We can assume that it was dug for the defense, as evidenced by its characteristic profile (wall are almost vertical in the lower part of the ditch and the bottom is very narrow). But defensive ditches, as a rule, correspond to terrain, shielding from the open surface of the village, located on a narrow headland or surrounded by gulles. The role of the ditch could be not purely defensive, but religious or ‘social’, separating two areas of the settlement with different purposes.

TH5-10 Abstract 17

Transcending disciplines in integrated studies of the Early Iron Age sites in Slovenia

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Keywords: Early Iron Age, Integrated studies, Transcending disciplines

Presentation Preference - Oral

Integrated studies of the Early Iron Age landscapes have in the recent years witnessed a tremendous upswing. Archaeology has thus become a melting pot for diverse disciplines, which in a way also met their borders in complex conditions of prehistoric settlements and their landscapes. Our first research step was always aimed at the understanding the basic geoecology of the area, which was studied with the help of ALS derived data. The next step we took was a geological and geomorphological field survey, whereas selected crucial areas were researched also with various geophysical methods, e.g. magnetic method using measurements of total magnetic field by applying corrections of diurnal variations using base station as well as magnetic polarization in gradient mode, GPR method from very low to high frequencies (50-400 MHz), low frequency EM method and measurements of top soil magnetic susceptibility. The phenomenon of the megalithic architecture developed in the Maltese Islands during the Neolithic between 3500 and 2500 BC yielded some of the oldest free-standing megalithic structures anywhere in the world.

The San Saffieli Hypogeum is an underground rock-cut burial site, with both carved and built elements similar to the architecture found above ground. It is organized on three levels, which were progressively carved starting from the surface level. The oldest level dates from about 4000 BC; subsequent chambers were added later and filled with funerary deposits up to the Tarxien Phase (3000- 2500 BC).

With the next step, the geochemical mapping with a pXRF, which we have carried out on one settlement so far, has invited also chemistry into the circle of disciplines, creating the integrated maps of the researched sites. Preliminary conclusions on archaeologically relevant correlations between different data sets are based on multivariate statistical analyses adopted to specific natural settings on metamorphic rocks.

As the last field research step we have applied low- and medium-invasive archaeological methods as drilling or test-trenching. The wide range of data, which was created by applying different methods deriving from various disciplines, has ‘broadened’ us into not only interdisciplinary but rather transdisciplinary research. Under such circumstances scientists from various disciplines can not only do their research, but have to combine and intertwine it with others to produce common results, which are not a sum of the included data, but its multiplied product.

(Further co-authors: Matej Dolinček, Nina Zupančič, Manca Vinazza, Igor Medarič, Matjaž Mori, Petra Basar)
TH5-10 Abstract 20
Housebuilding adaptation to the environment in the Neolithic of the south of Western Siberia

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Keywords: Environment, Housebuilding, Neolithic, Western Siberia

Presentation Preference - Poster

Natural capabilities and intellectual basis (set of skills and knowledge) of people at a particular time inseparably connected and could be considered as an adaptive resource of ancient groups.

Within this approach we have analyzed the archaeological materials of excavations of the Neolithic settlements on the Mergen' lake, which have been carried out for several years in the forest-steppe of Western Siberia. We focused on the details to illustrate the adaptation techniques of housebuilding to the environment in the mid-Holocene. On the geoarchaeological data, supplemented palynological and phytoliths on-site data, we reconstructed significantly different landscape around the settlement in the Early Neolithic (6-5 thousand BC), than today's. Continuously-inhabited settlement was located directly at the lakeshore and surrounded by open steppe landscapes, almost treeless. The climate was drier, although episodes of extreme flooding are also marked by stratigraphic and palynological data. Apparently later in the Chalcolithic (3 thousand BC) on this site were only seasonal constructions, but other constant settlements have been found on elevated terraces. Forest-steppe landscapes with birch forests were widespread at that time there.

The dwellings on the circular stages was classified on preserved traces of ground constructions, organic materials and archaeological finds, we made a graphic reconstruction of the external appearance of buildings and analyzed the dynamics of housebuilding tradition. We compared the archaeological and palaeoecological data and focus on the structural features of the houses, i.e. the geometry of wooden and stone (2-6 light upright houses), accessibility of natural materials for the construction, episodes of backfill (raising) floor, the internal structure of living quarters, the specifics of the heating, ventilation and drainage systems, anthropogenic pressure on the vegetation around the settlement. An important addition was a taxonomic study of the function of stone and bone implements using for building. The revealed facts indicate a high degree of adaptability of ancient settlers allowing to exploit for a long time the compact ecological niche near the lake.

TH5-10 Abstract 21
Geoarchaeology of Caspian settlements in eastern Maghreb: spatial organisation of outside areas

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Keywords: Caspian settlements, Geoarchaeology, the eastern Maghreb

Presentation Preference - Poster

The geoarchaeological research on Caspian settlements in the eastern Maghreb region is based on soil micromorphology. This research is important to understand the systems of settings of these nomadic and/or sedentary populations, by the characterization of the sedimentary records related to activities and their organisation. The micromorphological analysis reveals complex occupation dynamics, dominated by anthropogenic processes interacting with natural processes. Occupation surfaces show a great variability of sedimentary micro-facies according to 1) the nature of activities, 2) their spatial localisations, 3) micro-local climatic conditions and 4) the frequency degree of soils. In the outside areas, the occupation surfaces reflect differentiated spaces: areas near to the buildings or combustion structures, domestic wastes areas, passageway areas and multifunctional areas still characterized by several types of activities. Sedimentary archives contribute to increase our knowledge of the organisation and the functional modes of household spaces of Caspian settlements.

The aim of this communication, is to present new results about formation processes of occupation surfaces of outside areas, from several Caspian sites from Eastern Maghreb: Doukane El koutifa (Siliiana-Tunisia) Kel Elzah (Karouen-Tunisia), El Mekta (Dalta-Tunisia) and Shmi 1 (Hergla-Tunisia).
In recent years, considerable attention has been paid by archaeologists to the potential of an "open science" approach within archaeology, focusing firstly upon open access publication, and more recently on the imperative for open data. Papers in this session address the third pillar of open science within archaeology: open methods, as underpinned by the use of Free and OpenSource Software (FOSS). The benefits of FOSS in archaeology are manifold, ranging from inclusivity, through transparency and research integrity, to practical issues such as cross-compatibility. Closed-source proprietary software has created a two-tier system, selectively disadvantaging individuals and institutions with more limited resources while hindering the free exchange of data, obfuscating methodological detail, and increasing the risk of digital obsolescence. By contrast, FOSS allows for universal access and encourages reproducibility and compatibility of research methods, while facilitating collaboration, archiving, and data re-use. The range of FOSS applications in archaeology has grown significantly in the last decade, expanding from traditional heartlands in GIS and spatial analysis into omics, metaproteomics, bioarchaeology, and field recording, to name but a few. This session aims to draw attention to innovative ways in which archaeologists are applying the open source philosophy. Contributors will present cases in which the use of open software is instrumental in achieving objectives—whether in terms of expanding access to archaeology; developing reproducible methods; or enabling otherwise impractical research and collaborations. We also welcome papers showcasing innovative packages with the potential to facilitate such contributions. By raising awareness about the uses of FOSS in archaeology, we hope to promote the Freedom of Software movement within archaeological practice and to demonstrate how the discipline is developing towards a more democratic and egalitarian approach to information technology.

**Keywords:** FOSS, archaeology, research, open access, accessibility,

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**TH5-11 Abstract 02**

**Title:** ArchSeries: an R package for transparent estimation of chronological frequency distributions

**Author:** Dr. Orton, David, University of York, York, United Kingdom (Presenting author)

**Keywords:** chronology, R, uncertainty

**Presentation Preference:** Oral

Archaeologists often wish to plot the chronological frequency distribution of a given entity—for example a feature category, a plant or animal species, or an artefact type—within a specific site or region. Since each archaeological occurrence is subject to chronological uncertainty, and since dating resolution varies widely, estimating a single distribution from numerous occurrences is a non-trivial task. This is particularly problematic where data are combined from multiple sites or interventions with a wide range of different chronological break points and sources of dating information—for example sites with a long history of excavation, or urban areas with complex stratigraphy and a high concentration of development-led archaeology. Researchers are often forced to fall back on a lowest-common-denominator approach, trading resolution for comparability by combining data into broad period categories. This paper presents an R package for dealing with this situation without surrendering the original dating resolution. Designed originally for meta-analysis of zooarchaeological remains from numerous historical-period sites across London (used here as a case study), ArchSeries is built around functions for estimating frequency distributions using either (a) acoustic analysis or (b) simulation. Initially based upon uniform probability distributions within archaeologically defined limits, the simulation approach is currently being expanded to allow integration of archaeological chronologies with radiocarbon dates. The package also features a variety of functions for plotting the resulting frequency distributions along with their associated uncertainty. Finally, there is a tool for adjusting results according to the chronological distribution of research intensity. With raw, context-level archaeological datasets increasingly being made publicly available, it is hoped that ArchSeries will facilitate transparent re-use and meta-analysis of frequency data while allowing researchers to retain the full available chronological resolution.

**Keywords:** chronology, R, uncertainty

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**TH5-11 Abstract 03**

**Title:** Consumption patterns and morphology of cattle in a Late Neolithic settlement Polgár–Cocszolahom

**Author:** Dr. Csípog, Péter, Eötvös Loránd University of Sciences, Budapest, Hungary (Presenting author)

**Keywords:** Free software, Statistics, R, Zooarchaeology

**Presentation Preference:** Oral

In the last decades the zooarchaeological analysis of large sites shed lights on the limits of the interpretation of animal bones and respectively of the technologies and methods in the research. The main question is, how can we interpreting these huge datasets? Which methods can help us to visualise this incredible sample size? And finally which software(s) can help us in this quest? For the evaluation of raw data from the Late Neolithic (9th millennium BC) settlement of Polgár–Cocszolahom is a perfect case study for the archæological adaptation of one of the widely applied opensource statistical software: R. Through the wildrange analysis of animal bones I focused on the meet consumption of the main domestic species at the site, the cattle. But the question is, how can we earn more information about these animals with using only a FOSS to the research? R offers numerous possibilities and ways for the data analysis and visualisation, but in this case study I would like to show the whole process from the birth of the research question until the answers with the help of R.

**Keywords:** Free software, Statistics, R, Zooarchaeology
Can we have that on a map? Open Source options for the dissemination of archaeological spatial data

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Keywords: Automated refitting, Boxgrove, Open source software

Presentation Preference - Oral

Putting the pieces back together: automated refitting using open source software

Perhaps more than any other data type, geospatial information appeals to the archaeologist. The ability to plot a dataset in its geographical and chronological context offers a myriad of possibilities for interpretation, understanding and presentation. For over twenty years the Archaeology Data Service (ADS) has curated and disseminated such datasets, the latter through an increased use of tools for Web-based mapping. However, the practice of such dissemination has not always run smoothly, early work with proprietary software and middleware such as ArcIMS, ArcGIS Server and ArcSDE have proved problematic and on occasion, unsustainable. Thus in more recent years the ADS have moved towards utilising the wide range of Open Source tools and standards to disseminate this data. Use of innovations such as OpenLayers, GeoServer and WMS has facilitated a new wave of simple and efficient re-use potentials and coincided with a wider trend in a more unrestricted dissemination of archaeological and non-archaeological data alike. Indeed, as such methods of presentation become more easily achievable, if not expected, then so does an increased need to re-examine the potential of working online. This potential is not only limited to WMS publishing and consumption, but also the possibilities for use of linked data and API lookups for historic and modern place names and boundaries to spatially locate other data such as reports and journal articles. The long term effect of such moves may be less about building complex, and arguably unsustainable, Web-based GIS, but towards a more literal Web-mapping to facilitate resource discovery.

METHODS OF METAL DETECTING SURVEY IN ARCHAEOLOGY

Saturday, 3 September 2016, 09:00-13:00

Faculty of Philology, Room A7

Author - Mark, Jan, Institute of Archaeology of the CAS, Prague, Czech Republic (Presenting author)

Co-author(s) - Frank Danielisova, Alzbeta, Institute of Archaeology of the CAS, Prague, Czech Republic

Co-author(s) - Hornak, Milan, VLA MAGNA s.r.o., Vrutky, Slovakia

Presentation Preference - Regular session

While a number of archaeologists perceive metal detectors as a standard tool of archaeological research, a certain level of distrust of this technology still persists. This rather unsatisfactory state of affairs is also reflected in majority of methodological guides (guides to best practice) where usually the topic of metal detectors is mentioned only marginally or just the legal aspects of their use is emphasized. Organisers of this session are convinced that detector prospecting potential has not been fully realized yet. Thus, we would like to map the currently applied methodological approaches defining this technology. We encourage participants to present papers focusing especially on metal detecting applied under different conditions: cultivated areas, forests, underwater archaeology, research on specific activities such as battlefields, routes, complex surveys of important archaeological sites as well as comparisons of their informative value with other methods (non-destructive as well as destructive) of archaeological research. Last but not least, the topic of formation processes affecting metal artefacts especially in arable areas is equally important.

Metal Detecting in Brandenburg

Author - Prof. Dr. Schopper, Franz, Brandenburg State Authorities for Heritage Management and State Museum of Archæ, Zossen, Germany (Presenting author)

Keywords: Metal detector, site management, volunteer training program

Presentation Preference - Oral

Germany is a Federal State. The states are responsible for cultural purpose. So you have 16 different laws concerning the preservation of monuments and ancient heritage. The approaches vary even more. In Brandenburg State the archaeological finds are property of this state and a technical supported searching needs official permission. After that the applicants get a regional defined and temporary permission for research. They have to report and deliver the finds to the Brandenburg Landesamt fur Denkmalpflege (BLDAM). After controversial discussions the BLDAM established a program to give metal detectorists the possibility to participate in the research work of professional archaeology and for the benefit of society.

But there are certain preconditions. The applicants have to take part in an extensive training program. This program was first hand established to instruct volunteer supporters of archaeology, which are an important part of archaeology not only in eastern Germany. The training is organised by the Archaeological Society in Berlin and Brandenburg. Professional archaeologists are giving lectures on ancient periods and their typical finds, on methods of localisation in the field, how to report to the central archaeological information service, about problems of conservation, on health and safety measures (ammunition). They participants get the chance to work on an exhibition. The program takes about two years with 10 to 12 weekend lessons.

After that the applicants get a regional defined and temporary permission for research. They have to report and deliver the finds to the BLDAM, which is the legal owner of all upcoming archaeological objects. We check the information and have a critical look on finds and finding reports. Important is, that not only metal objects are reported but fine-, stone- and ceramic objects as well. In certain projects the goals for research are given by the BLDAM. For example to get detailed information on 16th to 19th century battlefields. Or when we try to understand the structure of abandoned medieval sites. More often important finds are made by chance.

This can be bronze hoards, silver coins or burials. Very often these objects are of certain importance and would be lost for archaeology. Without the possibility for metal detectorists of legal participation in scientific research, these objects would disappear.

In our opinion the Brandenburg approach to embody metal detectorists in our daily archaeological work gives us new information, helps us to canalize enthusiasm and to have less legal problems with detectorists. Overall metal detecting is nowadays an important part of modern archaeological site management.
Strategies of Detectoring Research in Mountain Areas of Slovakia

Author - Dr. Hornak, Milan, VIA MAGNA s.r.o., Vootly, Slovakia (Presenting author)
Co-author(s) - Dr. Mgr. Kristián Martin, Central Slovakia Museum Banáka Bystrica, Banáka Bystrica, Slovakia
Keywords: Detectoring, mountain areas, Slovakia
Presentation Preference - Oral

The hillfort is a typical settlement unit for mountain areas of Slovakia for a long period of time from the late Bronze Age until developed Middle Ages (12th - 13th century). A typical aspect of hillfort is in addition to building of fortification also treatment of landscape of its close economic background into a system of terraces, on which economic, agricultural and settlement activity concentrated.

We currently know about several hundreds of prehistoric or medieval hillforts with various settlement intensity in this landscape.

Other objects typical for mountain areas are various types of communications from service roads up to roads of trans-regional nature. There is a vast number of archaeological findings situated along such roads, which enable us to date the period of road usage as well as nature of goods transported on such roads or types of travellers using them.

Last but not least, mountain areas of Slovakia are rich in numerous relics of old mining activity, ranging from simple exploratory shafts through large extraction and processing areas up to abandoned mining villages. Material obtained from them enables us to learn about contents of material culture of mining communities from the oldest time to modern period.

Intensive and unregulated mass detecting has been occurring during the last quarter of century not only in Slovakia. It affected especially hillforts and their immediate background. Although mass detecting has brought irrevocable damage to learning about the national cultural heritage (absence of information about the finding site or about particular circumstances of the finding), it has also brought vast amount of information about the material culture of prehistoric and historic communities living in this area, even though such information has various informative value. Mass detecting has also brought discoveries of numerous new localities, which are exposed to biggest risks without the immediate response by archaeologists.

Our paper presents strategies of detecting research in mountain areas of Slovakia based on research of recent years.

The hilltop settlement Gradšče above Bašelj:
metal detecting survey vs. archaeological research

Author - Karo, Špela, Zavod za varstvo kulturne dediščine Slovenije, Ljubljana, Slovenia (Presenting author)
Co-author(s) - Knific, Timojač, Narodni muzej Slovenija, Ljubljana, Slovenia
Keywords: archaeological research, Gradšče above Bašelj, Slovenia, metal detecting survey
Presentation Preference - Oral

Gradšče, a Late Antique and Early Medieval hilltop settlement, rises above the village of Bašelj, north of Kranj, Slovenia. The first archaeological finds discovered at the top of the sharply peaked hill of Gradšče, were unearthed in 1906, during the construction of a hunting lodge. Thirty years later, landscape maintenance works around the lodge revealed more finds. The finds were sufficiently interesting to prompt archaeological excavations, which were conducted in 1939 under the direction of the National Museum in Ljubljana. In the following decades interest in the site almost died out. However, around 1990, new finds started to emerge, acquired by treasure hunters with metal detectors. In 1992, an archaeological team conducted a topographical survey with a metal detector. The site was revealed to be highly endangered due to the fact that the artefacts were very close to the surface. In the following years, rumours of new illegal detector finds prompted the decision to complement the topographical survey of the site and, in 1998, a team of archaeologists from the National Museum of Slovenia conducted a revision excavation, which confirmed existence of the settlement from the 5th-6th century and uncovered another layer with numerous iron objects and ceramic fragments, from the period between the end of the 8th century and the mid 10th century.

In the recent years, a lidar scanning and a geophysical research of the site and its surroundings were carried out, confirming numerous built structures inside the settlement. One of these, a tower built outside the defence wall was excavated in 2015. The new discoveries of the architectural remains, therefore, offered a great opportunity to compare the settlement’s structure with a distribution of small metal finds, recorded during the previous topographical surveys. Moreover, the presentation also gives a short overview on the national legislation regarding the search for archaeological remains and use of technical means for this purpose.
TH5-13 Abstract 01

Environmental conditions and Mesolithic-Early Neolithic sites in the basin of Voze Lake (Russia)

Author - Dr. Kosorukova, Natalia, Cherepovets State University, Cherepovets, Vologda region, Russian Federation

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Keywords: environmental conditions, palaeoenvironmental, palaeoclimatic

Presentation Preference - Oral

The pit-bog sites are located in the basin of Voze Lake in the Vologda region of Russia. The Pogostilene 15 site is dated to middle Mesolithic period, but the Karakhalava 4 site belongs to the Early Neolithic period. The archaeological finds were found under layers of peat and gyttja and the alluvial sand and clay deposits. The numerous finds from bones, flint, shell, wood, ceramics, metal bones and remains of wood fishing constructions were excavated. The application of geochemical, pollen and radiocarbon methods gave the possibility to reconstruct the palaeo-environment and to clarify the chronology of sites. The investigations of cultural layer successions on these sites allow us to trace not only changes in the material culture of the ancient people, but also the environmental development during the period from the beginning of the eight (Boreal period) to the middle of the sixth millennium BC (Atlantic Period), and the way ancient people interacted with the natural environment. The human groups occupied this area around ca.7800 cal BC. In the end of Boreal in beginning of Atlantic period the interruption of sedimentation occurred. The next stage of sedimentation was in the period of water level increasing. The climate became warmer. The large-leaved trees were spread. The early Neolithic people occupied the Karakhalava 4 site around ca.6200 cal BC. Probably, the favorable environment was the main factor that attracted the ancient people at this place of the lake. The wood fishing constructions belongs to this period. The birch sedimentation was in the period of water level increasing. The climate became warmer. The large-leaved trees were spread. The next stage of anthropogenic activity that attracted the ancient people at this place of the lake. The wood fishing constructions belongs to this period. The birch sedimentation was in the period of water level increasing. The climate became warmer. The large-leaved trees were spread.

This session seeks to explore new micro- and macro-scale approaches towards reconstructing palaeoenvironments, palaeoclimates, and palaeoecologies to answer key questions related to the impact of palaeoenvironmental and palaeoclimatic changes on past human and animal populations.

TH5-13 Abstract 02

Baltic Sea Lithuanian coastline changes in Mesolithic: landscape and peoples subsistence economy

Author - Prof. Zukūs, Vladas, Klaipėda University, Klaipėda, Lithuania

Co-author(s) - Prof. Griniūnas, Algirdas, Klaipėda University, Klaipėda, Lithuania (Presenting author)

Keywords: Mesolithic inhabitants, Palaeoenvironmental situation, the submerged prehistory

Presentation Preference - Oral

The submerged prehistory of the eastern Baltic has attracted great archaeological, geological, pollen, macrofaunal, diatom, radiocarbon analysis last years. The exploration was concentrated in order to localize the former Yoldia Sea and Ancylus Lake coasts, their shoreline underwater landscape reconstruction (coastal vegetation, relics of composition, their age, pollen, diatom analysis) and their potential settlement development in Lithuanian waters. Studies in 2014-2015 revealed northern part of the Curonian plateaux (underwater peninsula) sea bottom formation and cost lines in the 15-30 m depths. Yoldia Sea and Ancylus Lake shore underwater landscape studies were compared with the data from the Samogitian (West Lithuania) ongoing pollen, diatom and archaelogical investigations, which showed that in the Mesolithic period of human living and farming conditions were different. Palaeoenvironmental situation plays a leading role in the reconstruction of the human settling during the Early Holocene in coastal and continental area of Lithuania. Relict submerged forest vegetation composition remains confirm that the natural conditions at the time of former Baltic coastal water basin were favorable to live and succeed in farming for Early Mesolithic Kunda (Pulli) and Maglemose cultural communities. The tested area was favorable place for human settlement which included coastal fauna, coastal migratory birds and marine resource, seals especially in the Late Pre-Boreal and Early Boreal. Yoldia Sea and Ancylus Lake shore zone examined small lake surroundings could have been settled by Mesolithic inhabitants. In the first case – early Mesolithic Kunda culture (Pulli stage), and second – Maglemose settlers.

TH5-13 Abstract 03

Mediterranean foragers exploited cetacean strandings caused by climate change around 8,200 years ago

Author - Dr. Mannino, Marcello Antonio, Aarhus University, Aarhus, Denmark (Presenting author)

Keywords: carbon and nitrogen isotope analyses, cetaceans, hunter-gatherers

Presentation Preference - Oral

Cetacean strandings occur globally along coastal regions for a wide range of causes. It has been hypothesized that climate-driven environmental changes associated with global warming may dramatically increase cetacean mortalities. However, the compounded effects of natural and anthropogenic factors often make it difficult to establish the cause of present-day strandings and mortalities. Here we show that environmental changes driven by the abrupt climatic event of ~8,200 years ago likely contributed to increased cetacean strandings in the Mediterranean Sea. We found that, at this time, portions of many carcasses of four Odontocetes (i.e. Globicephala melas, Grampus griseus, Delphinus delphis and probably Physeter macrocephalus) and one Mysticete (Balaenoptera sp.) were butchered by the hunter-gatherers occupying Grotta dell’Uzzo. Stable isotope analyses on bone collagen from a large sample of remains recovered at this cave in NW Sicily show that only a red fox and a human that lived around 8,200 years ago acquired at least 40% of their protein from cetacean meat. The fact that a fox fed on cetaceans, and the absence of whaling technology, suggest that stranded animals were exploited. Numerous carcasses should have been available for at least a decade for a human to obtain such high proportions of cetacean protein. Frequent strandings probably resulted from starvation-induced disorientation linked to the impacts on primary producers, and consumers up the food chain, of year-on-year decreases in sea surface temperatures and salinities around 8,200 years ago. We hypothesize that the cetaceans beached at a locality south of Grotta dell’Uzzo, because, at lower sea levels, the SW corner of the Gulf of Castellammare was an acoustical ‘dead zone’, such as mass stranding hotspots worldwide. Our study confirms that climate-driven environmental changes, and the changing global warming represents a real threat to cetaceans in the near future.
The influence of past climate change on hunter-fisher-gatherer societies is a highly debated topic during recent years. The increasing interest in human-environment interactions has resulted in development of more accurate methods and techniques for paleoclimatic reconstruction. Thus, molliosc shells from archaeological sites may provide information on past climatic and environmental conditions, as well as human subsistence practices. Seawater temperatures (ST) can be reconstructed using geochemical techniques such as the analysis of stable oxygen isotope ratios on marine mollusc shells. In this paper we aim to reconstruct the evolution of ST in northern Iberia (Spain) from ~50 to 7 ka cal BP using oxygen isotope ratios obtained from the limpet Patella vulgata (Linnaeus, 1758). Modern and archaeological specimens from seven sites were analysed, producing a long-term record of environmental changes. Results suggest that important changes in ST took place during the time period investigated, with significantly higher seawater temperatures during the Holocene compared to the Late Pleistocene. Results also show a correlation between P. vulgata estimated ST and data from the Greenland NGRIP ice core and from deep-sea sediment core MD95-2042 located off western Iberia, suggesting that ST in northern Iberia followed a global pattern.

TH5 Science and multidisciplinarity in archaeology

and was home to some of the last surviving Neanderthals in Europe, and during the Last Glacial Maximum the region acted as a refugium for plants, animals and humans. Changes in the environment are thought to have been driving factors behind the extinction of the Neanderthals, the rise of Anatomically Modern Humans (AMHs), and later the development of the rich cave art assemblages. Carbon and nitrogen stable isotope analysis of hunted animal bone collagen from Palaeolithic levels of archaeological sites can be used to understand past environments at this time. Changes in the environment including factors such as temperature, aridity produce different isotopic signatures within plants, and the animals that consume them, and analysis of these specimens on a large scale. This research uses large scale isotopic analysis of animal and bone samples, before making comparisons to existing zooarchaeological assemblages, to characterise how the environment changed, and human responses to these environmental changes throughout the Middle and Upper Palaeolithic in this archaeologically important region, at this crucial time in human evolution.

TH5-13 Abstract 07
Changing mammal communities influence Neanderthal and Anatomically Modern Human food resources

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Keywords: Faunal palaeoecology, Food resources, Neanderthal

Presentation Preference - Oral

Neanderthal extinction has been approached from many perspectives in recent years, one of which is the difference in diet between Neanderthals and Anatomically Modern Humans (AMH). Differences in diet between the species may have influenced their ability to respond to climate change, i.e. the ability of AMH to diversify food resources has been suggested to have been advantageous and responsible for increases in population density. Both Neanderthal and AMH relied heavily on meat resources as proven by both zooarchaeological studies and stable isotope studies.

It has been claimed that Neanderthals exploited species for food that are often associated with warmer, more forested environments. Meanwhile, AMH apparently exploited a more diverse array of species, however, most of these are associated with more open, cooler habitats. These observed differences in resource exploitation by the different hominins have undergone little statistical testing; thus the aim of this paper is to test if these observations remain probable after statistical testing and interpret the data in more detail, as was previously impossible.

We conducted statistical analyses on a dataset that consists of radiocarbon dates from over 400 archaeological sites and associated faunal fauna, with a geographic range of Europe limited to the East by the Urals and Caucasus and a temporal range of 60-10 ka BP. The faunal part of the database comprises of mammals that are of medium to large size. The multivariate analyses are run on different aspects of the fauna: the herbivore, omnivore and the carnivore guild are tested separately and together. The temporal component, which reflects the palaeoenvironmental and palaeoclimatic changes, is taken into account by running the analyses over meaningful time-intervals. Principal Component Analysis (PCA) is used to study the differences in resource exploitation between Neanderthals and AMH. Improvements in radiochronology dating allow us to track changes in diet through time and space for both Neanderthals and AMH. We used Cluster Analysis (CA) in GIS setting, showing that sites cluster according to similar species composition through time and space.

The PCA confirms that Neanderthals are indeed more closely associated with species living in forested environments and AMH are more closely associated with species living in open environments. The geographical application of CA shows that there are geographical changes through time and space in species composition of archaeological sites, and this suggests that both Neanderthals and AMH have changed their diets through time and space. These analyses increase our understanding of the hominins adapting to changing climates and the results may be used in modelling the demise of Neanderthal populations.
with strontium isotope analysis) is commonly used to infer childhood geographical origin. However, given that dental tissues form incrementally, and only capture isotopic inputs from a fixed period (i.e. during their formation), their analysis only offers short-term records that (depending on sampling strategy) can encapsulate seasonal biases. The oxygen isotope analysis of other skeletal tissues and fractions, such as bone collagen or bone phosphate, offers the potential to provide evidence of longer-term mean oxygen isotope inputs and infer the composition of drinking water in later life. Not only could this be useful as an indicator of later life mobility, but also as a proxy for environmental change. Isotopic investigations of other tissues (e.g. long bone, tooth, bone phosphate) are typically used as indicators of dietary practices (given that, in some cases, dietary preparation techniques can significantly alter the composition of dietary water). Prior to routine archaeological application, however, the investigation of inter-tissue, methodological and taphonomic (diagnostic) factors affecting oxygen isotopes in skeletal remains is necessary.

Here, we present oxygen isotope data (δ18O) from multiple sites representing both rural and urban populations. Oxygen isotope values were determined in bone and tooth phosphate (δ18O), tooth carbonate (δ18Oc), and also in bone collagen (δ18Oc). These analyses were combined with FTIR in order to provide additional insights into sample integrity. The implications of this research for the planning of future archaeological oxygen isotope investigations and sampling strategies will be explored.

**TH5-13 Abstract 09**

**Stable Isotope Markers of Herd Management in Prehistoric Croatia**

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**Keywords:** animal management, Croatia, stable isotopes

**Presentation Preference:** Oral

We use stable carbon, nitrogen, and sulphur isotope values as proxies of diet and local environment to highlight differences in 18

herd and management practices between domesticated species in prehistoric Croatia. Bone samples from known domesticated (sheep, goat, cow, and pig) and wild species (deer and wild boar) are taken from sites in two different Croatian landscapes: central Dalmatia and Lika. Sampled Dalmatian sites are all Neolithic coastal open-air villages with evidence of a heavy reliance on domesticated species and possible seasonal transhumance routes between valleys and the nearby Dinaric Alps. Iron Age settlements in Lika, in contrast, are located on rugged karstic terrain and ringed by mountains that made movement of livestock to the sea unattractive. We expect stable isotope values to reflect differences in management strategies (i.e., transhumance vs. local grazing) and the use of sulphur as a tool for more finely-grained dietary analyses and an environmental indicator. Analyses of faunal stable isotope values from these geographically distinct sites constitute the first step in addressing questions of prehistoric pastoral development, spread, and ultimate divergence of faunal species.

**TH5-13 Abstract 10**

**Changing cultures, changing environments**

**Author:** Pitt, Jacqueline, Bournemouth University, Bournemouth, United Kingdom (Presenting author)

**Keywords:** Human-animal interactions, Palaeoecology, Zooarchaeology

**Presentation Preference:** Oral

Climate and environment are critical factors for the survival of every living species. Animals and plants are not only conditioned by, but also change their environments. The interaction between different species and their environments changes over time and as such can be very informative, but identifying this complex relationship in the archaeological record is challenging.

The domestic chicken presents an interesting case study. Introduced into Europe during the Iron Age as a non-native species, its novel presence necessarily alters its ecosystem, both in terms of inter-species relationships and on account of humans altering the local environment to accommodate this newly-domesticated exotic bird. Application of ecological community models to archaeological faunal data forms the basis of a macro-scale approach to explore the complex network of interactions that determined past ecosystems. Europe-wide comparison of faunal and floral ecological data at site level from the period prior to the introduction of the chicken up until the end of the Roman Empire enables us to better understand how changing climate and attitudes over time have been influenced by, and shaped, the environment within which these communities existed.

**TH5-13 Abstract 11**

**Revisiting the impacts of coastal sand movement in prehistoric Scottish Islands**

**Author:** Gai, Emily, University of St Andrews, St Andrews, United Kingdom (Presenting author)

**Keywords:** aeolian sand, geoarchaeology, Scottish islands

**Presentation Preference:** Oral

Islands and their coastlines have long been important landscapes for settlement, resource procurement and structuring social interaction. Such environments have also proven fruitful in exploring environmental change and its impacts on human activity. Coastlines are by nature dynamic and locally-variable. Manifestations of environmental change such as flooding, erosion and sand movement can have immediate and visible impacts on coastal activities and geomorphology. Historical sources provide a detailed view of environmental deterioration and its far-reaching effects on coastal populations throughout Britain, particularly during the Little Ice Age. Notable impacts is that of coastal sand movement and inundation, leading to the marginalisation and abandonment of agricultural land in response.

The presence of blown sand horizons at coastal archaeological sites attests to similar movements in the prehistoric period across northwest Europe. However, the nature of impact and response in the prehistoric record is less clear, with environmental proxies often providing ill-defined. Prehistoric archaeologists face the challenge of reconciling temporal scales provided by the environmental sciences with scales that are archaeologically-meaningful to explore similar human-environmental relationships at deeper timescales.

This paper will introduce a doctoral research project which aims to catalogue and characterise episodes of coastal sand movement in the prehistoric period using the Northern and Western Isles of Scotland as a case region. A mixed-methods approach has been taken to this research, combining archaeological evidence with geoarchaeology and historical analogy. The project also utilises geophysical survey and luminescence dating to investigate the nature, source and chronology of sand movement on archaeological sites and landscapes. This will be then placed within the wider socio-cultural context of a region where suggested ‘buffering’ responses such as mobility and diversification can be reviewed. Selected multi-period sites in Orkney and the Outer Hebrides are being used to explore the ways in which this complex archaeological and environmental record can be approached.

**TH5-13 Abstract 12**

**Anthropogenic impact on the changes in landscape in the tract “Adzhel” in the Eastern Crimea**

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**Keywords:** antiquity, Crimea, landscape

**Presentation Preference:** Poster

The connection between location of ancient settlements with the conditions of the environment and agricultural potential is obvious. It is equally obvious, the dependence of the choice of location for the settlement with the landscape. In this connection, great interest is the analysis of the historical situation in a particular area in the presence on it of one or more dominant objects of human impact on the environment. In our case, that is the territory of the tract Adzhel. The tract occupies part of the territory of the Eastern Crimea adjacent to the Sea of Azov, is located 45 kilometers west of the eastern point of Crimea, and covers an area of about 40 km. km. The name of this area connected with Adzhel quich, located here. As a result of studies of the XX century, there are discovered many barrows and more than a dozen ancient archaeological sites of other types. For detection the relationship the provisions of the identified objects of natural-geographical and landscape features of the tract, GIS has been prepared, including layers, describing the geography, soil properties, topography and hydrology of the area. On a large part of Tracts Adzhel, with modern agricultural field, there are no traces of settlement structures, says that, in ancient times these territories were not built up, but could also be used for agriculture. Settlement structures are located primarily along the boundaries of the modern field, in areas with less fertile soils. The territories occupied by modern fields as underlying talus deposits in the middle and lower Piscene rocks - sand, clay, iron ore, shelly limestone; rocks of Metais level of Upper Miocene - shelly limestone, Ectoptrocte reefs, clay. Quaternary rocks represented by aeolian-talus deposits, with material composition - loess-like loam and loess. Soils, occupying a significant part of Tracts - southern micaceous carbonate black earth, are one of the most fertile soil types on the Kurch Peninsula. There is a spatial matching soil types and underlying pre- Quaternary rocks, which in turn is likely to determine the features of talus formations of the Quaternary period, directly acting as a soil-forming grounds.

The conclusion states that the possible nature of the relationship between the territory of the tract in antiquity, based on the absence of archaeological material in the territory of modern fields correspond to the conclusions made based on the analysis of geological and soil conditions of the area - the types of soil in the tract Adzhel determined by soil-forming rocks, and are not associated with anthropogenic or other influences, and it can be assumed that in ancient times they were the same, i.e., highly suitable for agriculture.
The work was performed as part of research "Structural and spatial study of monuments as a paradigm of the archaeological research of history of a particular region (for example, the tract) Adzhel' and the settlement Belinsky') in the Tula State Lev Tolstoy Pedagogical University (reference number 2014/388 Ministry of Education of Russia, research № 1799).

TH5-13 Abstract 13

Geomorphology and early Neolithic migration routes into the Transylvanian Depression

Author - Persoiu, Ioana, Stefan cel Mare University, Suceava, Romania (Presenting author)
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Keywords: Carpathians, Early Neolithic, migration routes

Presentation Preference - Poster

In this paper we discuss the geomorphological conditioning of the migration routes of the early Neolithic communities into the Transylvanian Depression (Carpathian Mts., East Central Europe), as reflected by the spatial and temporal distribution of the Starčevo-Criş archaeological sites in the western part of Romania. The inventoried archaeological sites are located along rivers, preferentially positioned in the floodplain and low fluvial terraces; between 70 - 450 m asl, with few sites at higher elevations along rivers in the mountainous areas. The main access route across the Carpathian Mts was eastward from the Pannonian Basin, along the Mureş River. During Starčevo - Criş III, the number of the early Neolithic communities has increased, mainly along Mureş River and its main tributaries (Târnava Mică, Târnava Mare, Arîg), associated with a slow eastward movement. A secondary eastward route was along the low alluvial plain (known as The Western Romanian Plain) of Mureş, Criş and Someş Rivers. Here too, the peoples moved from the area of Mureş alluvial plain to the NE. They arrived in the perimeter of the River and its main tributaries (Târnava Mică, Criş, and Someş Rivers). The main access route across the Carpathian Mts was eastward from the Pannonian Basin, along the Mureş River. During Starčevo - Criş III, the number of the early Neolithic communities has increased, mainly along Mureş River and its main tributaries (Târnava Mică, Târnava Mare, Arîg), associated with a slow eastward movement. A secondary eastward route was along the low alluvial plain (known as The Western Romanian Plain) of Mureş, Criş and Someş Rivers. Here too, the peoples moved from the area of Mureş alluvial plain to the NE. They arrived in the perimeter of the River and its main tributaries (Târnava Mică, Târnava Mare, Arîg), associated with a slow eastward movement. A secondary eastward route was along the low alluvial plain (known as The Western Romanian Plain) of Mureş, Criş and Someş Rivers. Here too, the peoples moved from the area of Mureş alluvial plain to the NE. They arrived in the perimeter of the River and its main tributaries (Târnava Mică, Târnava Mare, Arîg), associated with a slow eastward movement. A secondary eastward route was along the low alluvial plain (known as The Western Romanian Plain) of Mureş, Criş and Someş Rivers. Here too, the peoples moved from the area of Mureş alluvial plain to the NE. They arrived in the perimeter of the River and its main tributaries (Târnava Mică, Târnava Mare, Arîg), associated with a slow eastward movement. A secondary eastward route was along the low alluvial plain (known as The Western Romanian Plain) of Mureş, Criş and Someş Rivers. Here too, the peoples moved from the area of Mureş alluvial plain to the NE. They arrived in the perimeter of the River and its main tributaries (Târnava Mică, Târnava Mare, Arîg), associated with a slow eastward movement. 

TH5-13 Abstract 14

North Atlantic and Labrador seasonal climate: isotopic evidence from micromilled bivalves and wood

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Keywords: micromilling, seasonal climate, tree-rings and bivalves

Presentation Preference - Poster

High-resolution records are exceptionally important for reconstruction of past environmental and climatic conditions. Micromills are particularly important devices because they obtain discrete samples at high temporal resolutions, thus allowing for reconstructions of intra-annual environmental and climatic variability. Seasonality of temperature and precipitation are one of the most significant parameters of climate that directly influences terrestrial and marine environments. Here, we present subseasonal climate data obtained using our custom-designed robotic micromilling device from bivalve shells retrieved from a North Atlantic core near Iceland and a wood disc from a white spruce tree collected near the tree line in coastal Labrador.

We provide the first whole Holocene temperature record of seasonality for the North Atlantic, a climatically important region with significant transregional effects. Thirty five well-preserved aragonitic bivalves were extracted from a marine piston core from NW Iceland and sequentially micromilled concordant with growth banding. Carbonate aliquots were subsequently analysed for δ18O(CaCO3) values to obtain snapshots of ambient seawater temperatures at a sub-monthly resolution. Our data suggest that the Early Holocene (10,650 to 7,600 cal yr BP) exhibited the most persistently warm summers, with maximum summer temperatures ~2°C higher, and with greater seasonality than during the subsequent cooler Neoglacial Period (7,000 to 4,750 cal yr BP). The Neoglacial Period was relatively stable cold period, with the lowest summer maximum temperatures, as well as the lowest seasonality during the Holocene. Sporadic warm periods and increased seasonality are observed in the record after 4,500 cal yr BP, when maximum summer temperatures reached between ~7 and 9.5°C. The highest reconstructed temperatures of the entire record occurred during the Roman Warm Period at ~2,200 cal yr BP.

Three centuries of subannual/annual climate data were retrieved from the δ18O and δ13C values of tree-ring cellulose in the temperature-sensitive region of central-eastal Labrador, Canada. A large cookie of a white spruce (Picea glauca) tree was micromilled to retrieve multiple samples per year and/or early and late wood that were subsequently analysed for δ18O cellulose and δ13C cellulose values. The coastal Labrador region is a climatically dynamic region that is influenced by ocean-atmosphere interactions and thus has excellent potential for studying both, terrestrial and marine climate variability. We find a good agreement between reconstructed mean-annual temperatures and major climatic trends and events, including multidecadal warm and cold climate episodes, historical meteorological measurements collected by the Moravian missionaries, modern mean-annual temperatures and salinity anomalies in the NW North Atlantic Ocean, as well as cooling trends induced by major volcanic eruptions such as Lakiaggar in 1783-84, Tambora in 1815, and Krakatoa in 1883. Persistent cold intervals are found from 1790 to 1810, 1875 to 1895, and 1950 to 1970, while the warmest intervals are found during the mid-18th and 19th centuries.

Moreover, continuous transform wavelet analysis was used to analyze δ18O cellulose and δ13C cellulose periodicities and suggest that their interannual and multidecadal periodicities are similar to those of the NAO.

TH5-13 Abstract 15

The work was performed as part of research "Structural and spatial study of monuments as a paradigm of the archaeological research of history of a particular region (for example, the tract) Adzhel' and the settlement Belinsky') in the Tula State Lev Tolstoy Pedagogical University (reference number 2014/388 Ministry of Education of Russia, research № 1799).
TH5-14 HUMAN LAND USE AND SUBSISTENCE HISTORY OVER THE HOLOCENE

Thursday, 1 September 2016, 09:00-18:30
Faculty of Philology, Room 92

Author - Whitehouse, Nicki, Plymouth University, Plymouth, United Kingdom (Presenting author)
Co-author(s) - Morrison, Kathy, University of Chicago, Chicago, United States of America
Co-author(s) - Bauer, Andrew, Stanford University, Stanford, California, United States of America
Co-author(s) - Wandsnider, LuAnn, University of Nebraska-Lincoln, Lincoln, United States of America

Presentation Preference - Workshop

We bring together archaeologists and palaeoecologists working on land use and land cover history over the Holocene, for any area or region of the world. Land use is inferred from settlement patterns, artifact scatters, plant and animal remains and off-site palaeoecological records. We especially wish to consider the range and intensity of subsistence activities at a regional and spatio-temporal scale. Land cover may be inferred from complementary palaeoecological data. A long-term focus, examining changes ~8000 cal BC to ~cal AD 1500 (10,000 BP - 500 BP), will allow progression towards a global overview of how subsistence and land cover has changed as a consequence of hunter-gatherer and agricultural activities across different regions of the world.

We would like to concentrate especially (but not exclusively) on the following periods: the early Holocene (~8000 cal BC), the impacts and consequences of agricultural production (~4000 cal BC) and intensification (~2000 cal BC). More recent periods, focusing on areas outside of Europe, are also welcomed, as the chronology of activities are substantially different to Europe. As we will take a global perspective, we expect diverse regional land use and subsistence practices to be explored. Papers that cover all or parts of these periods and contributions that synthesize understanding of subsistence practices and implications for land usage are welcomed. This session will form part of activities of the PAGES-funded LandCover6k project (http://www.pagesigbp.org/en/reg/landcover6k/intro), an international and interdisciplinary working group dedicated to reconstructing global Holocene land use and land cover. The initial goal of this effort is to critically evaluate and improve models of anthropogenic land cover change being employed by climate scientists and ensure these are archaeologically robust and are well-informed by current understanding of human land use history.

TH5-14 Abstract 01

Towards a global history of human land use over the Holocene

Author - Prof. Whitehouse, Nicki, Plymouth University, Plymouth, United Kingdom
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Co-author(s) - Madella, Marco, Department of Humanities, University Pompeu Fabra (UPF), Barcelona, Spain
Co-author(s) - Galliard, Marie-Jose, Department of Biology and Environmental Science, Linnaeus University, Kalmar, Sweden

Keywords: Agriculture, Holocene, Land use

Presentation Preference - Oral

This paper outlines the aims of the PAGES-funded LandCover6k project (http://www.pagesigbp.org/en/reg/landcover6k/intro), an interdisciplinary working group dedicated to reconstructing global Holocene land use and land cover. The goal of the project is to provide relevant, empirical data on global past anthropogenic land-cover and land-use change to climate modelers. The LandCover6k working group infers land-use data from fossil pollen records (lake sediments and peat deposits), and historical archeological and archaeological records (including pollen, wood and plant micro/macromains). We focus on regions of the world where humans have had a significant impact on land cover during the last 6000 (6k) calendar years (in some regions earlier than 6k ago) through deforestation and diverse agricultural practices.

We outline how land-use change is important for understanding climate forcing and why its effects on climate remain poorly understood. Among the effects of land-cover change on climate, the best known is biogeochemical effects, in particular the influence on the exchange of CO2 between the land surface and the atmosphere. The biogeochemical effects are less well understood. Moreover; the net effects of both biogeochemical and biogeophysical processes due to land-use change are still a matter of debate. The pollen-based reconstructions of past land use use pollen-vegetation modelling approaches, with mapping of pollen-based land-cover change using spatial statistics; historical and archaeological data are upscaled and summarized on maps of major land-use categories. The results of both activities will then be used to revise existing Anthropogenic Land Cover Change (ALCC) scenarios, which presently use models to reconstruct human impacts (e.g. Kaplan et al. 2009; Klein Goldewijk et al. 2011).

Our major focus is on the reconstruction of land-use history; the goal is to ensure that interpretations are archaeologically robust, well-informed by current understandings of human land use history and useful to the archaeological community, as well as the modeling community. We present initial results from our land categorization work and consider some of the challenges and opportunities associated with these efforts. These include some of the assumptions around the nature of hunter-gatherer human impacts, early farming and ongoing land use activities and how these differ in various parts of the world.

We hope the project will facilitate more realistic understanding of the variation of human land use across space and time and offer the opportunity for the archaeological community to contribute towards globally important issues.

References:

TH5-14 Abstract 02

Land Use 6k: A First Assessment of South Asia

Author - Bauer, Andrew, Stanford University, Stanford, United States of America (Presenting author)
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Keywords: Climate Change, Land Use, South Asia

Presentation Preference - Oral

This paper will review the current state of archaeological evidence for human land use in South Asia in the middle to late Holocene. The review forms part of a larger effort of the PAGES-supported LandCover6k and LandUse6k project (http://landuse.uchicago.edu/about/) to reconstruct global land use and land cover datasets for the purpose of improving models of anthropogenic land cover change being used by climate scientists. Here we will present archaeological and palaeoecological data from different regions of modern day India, Pakistan, and Bangladesh in an effort to identify significant changes in agricultural, pastoral, hunting and foraging land use and anthropogenic land cover changes between ca. 6000 BP and 3000 BP. As we will detail, during this period there was an intensification and expansion of agricultural and pastoral land use across many regions of South Asia that significantly affected land cover and other environmental conditions.

TH5-14 Abstract 03

Long-term Patterns of Human Land Use in the Temperate Woodlands of Northeastern Mississippi, U.S.A.

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Co-author(s) - Morrison, KD., University of Chicago, Chicago, United States of America

Keywords: Holocene, Land Use, Southeastern U.S.A.

Presentation Preference - Oral

Decades of archaeological survey and excavation in the upper Tombigbee River drainage of Mississippi, southeastern U.S.A., have produced a large body of data related to demographic, settlement, and subsistence patterns over the course of the Holocene. Using seriations of ceramics and hafted bifaces and absolute dating results, we chart fluctuations over time in human population densities and the exploitation of a range of resources. Marked changes in human landscape use are seen to have occurred during 1) the mid-Holocene, when climate change led to fluctuating environmental conditions; 2) ca. 500 BCE – 1000 CE, when human population growth related to the advent of sedentariness led to increasing hunter-gatherer pressure on local-scale environments; and 3) the adoption of agriculture at ca. 1000 CE, which was selected for in the face of such pressures. We also discuss the different roles that construction of monumental architecture may have played across the changing selective environment over the last 10,000 years in the study area.

TH5-14 Abstract 04

North American Land Use from 6K Onward: A First Look

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Keywords: collaborative research, land use, North America

Presentation Preference - Oral

Our major focus is on the reconstruction of land-use history; the goal is to ensure that interpretations are archaeologically robust, well-informed by current understandings of human land use history and useful to the archaeological community, as well as the modeling community. We present initial results from our land categorization work and consider some of the challenges and opportunities associated with these efforts. These include some of the assumptions around the nature of hunter-gatherer human impacts, early farming and ongoing land use activities and how these differ in various parts of the world.
Integrating syntheses of land use by archaeologists, historians, and historical geographers, we present a preliminary meta-analysis of land use, including different modes of land use - foraging, agriculture, pastoralism, and urbanism - by indigenous and European populations in the Czech Republic. Our treatment considers eastern North America, the Great Plains of North America, and Middle America, including Mexico. We focus on specific time periods within the Middle and Late Holocene, as land use rapidly transformed from generalized foraging, to specialized foraging, to intensively managed commodification (including forms of pastoralism) and later agriculture, with urban centers appearing by 1000 AD in various parts of North America. We conclude with the historic era, 1850 CE, by which time agriculture and other land use practices were industrialized. Land use characterizations such as these are the foundation for the construction of higher fidelity models of recent climate change. This effort contributes to understanding of a global collaboration to document land use around the world and through time, in order to achieve a better understanding of anthropogenic involvement with climate change. We seek input from scholars of European archaeology on method and implications.

TH5-14 Abstract 05
Intensity of human impact inferred from pollen and-cover reconstruction and archaeological models
Author - PhD Draslerova Dagmar, Institute of Archaeology of the CAS, Prague, Prague 1, Czech Republic (Presenting author)
Co-author(s) – PhD Abraham, Vojtech, Department of Botany, Faculty of Science, Charles University, Prague, Czech Republic
Keywords: archaeological modeling, REVEALS, vegetation cover
Presentation Preference - Oral

Recent global change accelerates the need for understanding of human-climate relationship and for quantification of anthropogenic land-cover change in the past. We inferred human impact both from the pollen-based land-cover reconstruction and from archaeological data. We present a current state of the research concerning this cross validation for the Holocene period in the selected regions of the Czech Republic.

We used pollen data from the PARYLCZ database (http://botany.natur.cuni.cz/palycz) and recalculated them by the REVEALS model into vegetation estimates. The algorithm considers pollen productivity, pollen dispersal and deposition, when interpreting fossil pollen assemblages. The setting of model parameters was adopted from the previous testing, in which the model was adjusted to the recent vegetation in the same regions. Actual regional vegetation (60 km radius) was obtained by combining the CORINE Land Cover map with forest inventories, agricultural statistics and habitat mapping data. Among the vegetation estimates of different taxa, Cerealia, Plantago lanceolata and Poaceae were considered as indicators of crop cultivation, pastoral management and deforestation in general.

Archaeological data was taken from the Archaeological database of Bohemia. The intensity of human impact was inferred by analyzing the economic mode of a prehistoric community and its consequences to the surrounding environment. Special attention was paid to estimate the amount of cereals that could be grown in different prehistoric periods. Pollen-based and archaeological-based cereal estimates show very similar pattern when compared relatively. However, absolute area of pollen-based cereal estimates is much lower than cereal area derived from archaeological data. Thus, the presentation will also be an attempt at explaining and understanding the causes of this variability.

The presence of the first tell settlements in the southeastern Romania and their development between 4700-3500 BC allowed some observation about animal paleoeconomy evolution over several cultural sequences (Boian, Gumelina, Salcita and Cernavaidia I). Thus, the existence of numerous tell settlements with a complex stratigraphic and chronocultural sequences attested (e.g. Hansova, Vladimica, Casacovarele, Vitanesti, Draganares Olt, Gumelnita) gave us the opportunity to record some changes in the livestock and hunting activities. Regarding the livestock activity, cattle and sheep/goat which prevail, shows highly significant variations by region. The slaughtering curve studies reveal that the cattle are grown for milk while sheep/goat is bred for meat. In this manner, between the two types of animals we remarked a complementarity in animals' products. Our study also captures the pig growing importance from 5% to 25% since the beginning of the first tells settlement, so this is closely linked to the sedentary lifestyle of the Eneolithic populations. Additionally, attention was paid to estimate the amount of cereals that could be grown in different prehistoric periods. Pollen-based and archaeology-based cereal estimates show very similar pattern when compared relatively. However, absolute area of pollen-based cereal estimates is much lower than cereal area derived from archaeological data. Thus, the connections with the environment are strengthened, a vital thing for an efficient exploitation of local potential.

TH5-14 Abstract 07
Middle Neolithic transformations of food economy in the upper Vistula basin (SE Poland)
Author - Dr. Moskal-del Hoyo, Magdalena, W. Szafar Institute of Botany, Polish Academy of Sciences, Krakow, Poland (Presenting author)
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Keywords: food economy, Funnel Beaker Culture, South-Eastern Poland
Presentation Preference - Oral

In the first half of the fourth millennium BC, in the upper Vistula basin, from the perspective of the past material culture, the last units of the Long-Neolithic-Pol�gicze complex (included to the so-called Danubian Neolithic) disappeared. In that period a new archaeological phenomenon appeared and was gradually spreading; it was the south-eastern group of the Funnel Beaker culture (SE TRB). In central-European prehistory, significant changes in systems of Neolithic food economy and settlement have been associated with this culture. In the most complete and systematic way they were modelled by J. Krup, in the 1970s and 1980s. These transformations would consist of overcoming of ecological and topographical constraints (barrier), characteristic of Danubian Neolithic, and including into the Neolithic occurrence virtually all landscapes of a given territory (“second stage of Neolithisation”), i.e. eastern part of Lower Poland in our case. These processes would involve a much more widespread use of live as a basic agrotechnological tool and the formation of a shifting, slash-and-burn mode of cultivation. The term-long functioning of such a system would lead to the appearance of large, deforested areas (grasslands and parklands) of anthropogenic origin, in the second half of the fourth millennium BC. The main aim of the presentation will be to evaluate that model, with the use of new archaeological, paleoecological and palaeoenvironmental data, obtained i.a. in the settlement of the TRB at Mozawa (the Pilszów district). In the view of these data, it seems that the aforesaid model can be applied only to certain areas of the upper Vistula basin, mainly less highlands. Economy and settlement of Neolithic groups living in the fourth millennium BC in other ecological regions/directions is not associated, with broad-spaced, extensive human interference in environment. Consequently, the presentation will also be an attempt at explaining and understanding the causes of this variability.

TH5-14 Abstract 08
High resolution record of land use, vegetation and erosion history from Lake Skogstjern
Author - Dr. Wiecekowska-Lüth, Magdalena, University of Kiel, Institute of Pre- and Prothistoric Archaeology, Kiel, Germany (Presenting author)
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Keywords: lake sediments, micro-charcoal, vegetation history
Presentation Preference - Oral

This research was supported by the Czech Science Foundation grants No. 13-11193S and 16-10100S.

TH5-14 Abstract 06
Animal subsistence in the Eneolithic period from South-East Romania
Author - PhD Balasecu Adrian, National Museum of Romanian History, Bucharest, Romania (Presenting author)
Keywords: Eneolithic, Romania, zooarchaeology
Presentation Preference - Oral

I. Thus, the existences of numerous tell settlements with a complex stratigraphic and chronocultural sequences attested (e.g. Hansova, Vladimica, Casacovarele, Vitanesti, Draganares Olt, Gumelnita) gave us the opportunity to record some changes in the livestock and hunting activities. Regarding the livestock activity, cattle and sheep/goat which prevail, shows highly significant variations by region. The slaughtering curve studies reveal that the cattle are grown for milk while sheep/goat is bred for meat. In this manner, between the two types of animals we remarked a complementarity in animals' products. Our study also captures the pig growing importance from 5% to 25% since the beginning of the first tells settlement, so this is closely linked to the sedentary lifestyle of the Eneolithic populations. Additionally, attention was paid to estimate the amount of cereals that could be grown in different prehistoric periods. Pollen-based and archaeology-based cereal estimates show very similar pattern when compared relatively. However, absolute area of pollen-based cereal estimates is much lower than cereal area derived from archaeological data. Thus, the connections with the environment are strengthened, a vital thing for an efficient exploitation of local potential.
A varve preservation record of climate change and human impact from Lake Tiefer See (NE Germany)

Author: M. Sc. Dräger, Nadine, GFZ Potsdam, Potsdam, Germany (Presenting author)
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Keywords: human impact, lake sediment, varve chronology

Presentation Preference: Oral

Annual laminated (varved) lake sediments represent unique archives in continental areas providing both, precise chronologies and seasonally resolving proxy data. Lake Tiefer See in NE Germany provides such an archive for an integrated multi-proxy study based on high-resolution sediment analyses. Lake Tiefer See was formed during the last glaciation and is part of the Klocksin Lake Chain, a subglacial channel system that crosses the Pomeranian terminal moraine. Coiring campaigns at the deepest part of the lake (82 m water depth) yielded 7 sediment profiles. From these individual profiles a 7.7 m long continuous composite profile has been compiled covering the past ~6000 years. The chronology of the core sequence is based on a multiple dating approach including varve counting, radiocarbon dating of terrestrial plant remains and tephrochronology. We present a combined approach of microfacies analyses, palaeoecological record evidences some intensification in animal husbandry only during the second half of the Bronze Age, involving slightly higher degree in landscape openness and the utilization of wet meadows for grazing purposes. Crop cultivation, however, plays a minor role even up to the pre-Roman Iron Age.

According to the pollen-analytical data the establishment of a full farming community is taking place exclusively in the centuries AD, characterized by a general expansion and intensification of the land-use as verified by extensive forest clearances and fires, crop cultivation on permanent fields and the presence of open pastures as well as associated therewith advanced soil degradation and increased erosion rates.

These results both support as well as challenge the archaeological discussion on the relationship of humans and surroundings and from a mobile to a sedentary way of life.

The sediment record of Lake Tiefer See exhibits distinct decadal- to centennial-scale alternations between well- and non-varved intervals with an increasing trend of non-varved periods since ~4000 cal yr BP. These non-varved episodes generally coincide with phases of increased vegetation openness as reconstructed from pollen data. Predominantly varved periods before AD 1924 are characterized by low productivity and concur with closed forests in the lake catchment. In contrast, well-preserved varves after AD 1924 are linked to increased lake productivity likely due to anthropogenic eutrophication. In this study we discuss the influence of climate change and human activity on varve preservation. We propose that the observed long-term increase of non-varved intervals is linked to gradual climate change in the Late Holocene triggered by insolation changes, whereas superimposed centennial- and decadal variability of varve preservation caused by a complex interaction between human activity and short-term climate changes. We furthermore discuss possible relationships between known climate variability and human history at Lake Tiefer See.

This study is a contribution to the Virtual Institute of Integrated Climate and Landscape Evolution Analysis – ICLEA – of the Helmholtz Association (grant number VH-VI-415) and uses infrastructure of the Terrestrial Environmental Observatory (TERENO) of the Helmholtz Association.

TH5-14 Abstract 10

Early agriculture and landscape evolution in the Northern Mediterranean

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Keywords: Agriculture, Neolithic, Sustainability

Presentation Preference: Oral

The Maltese Islands – a small, relatively isolated archipelago of only 316 sq. km. – have been exploited by successive agricultural civilisations since 5000 cal BC. At around 3000 cal BC there was a cultural fluorescence that saw the construction of elaborate communal hypogea, distinctive forms of figurative art, and unparalleled megalithic architecture. Through interdisciplinary work in palaeoecology and the archaeological sciences, the ERC-funded FRAAGSUs is currently investigating how small island communities managed to sustain such a precocious economy and culture in such a restricted ecological setting. New archaeological and zooarchaeological data have revealed the widespread importance of cereals and domesticated livestock in prehistoric Malta. Modelling the potential for soil erosion has revealed that technical mechanisms to manage the environment were developed by prehistoric agriculturists. But were there failures in the agricultural system, and what impact did this have? Shortly after 2400 cal BC, for example, there was an episode of cultural change – was this a consequence of socio-economic mis-management, or environmental collapse? An overview of this research is presented in this paper, acknowledging the challenges that exist when comparing archaeological events with environmental data lacking chronological resolution.

TH5-14 Abstract 11

Environmental changes and agricultural systems in NW Iberia during the Middle and Late Holocene

Author: Seabra, Luis, CIBIO-Research Center in Biodiversity and Genetic Resources-University of Porto, Palos de Ferreira, Portugal (Presenting author)
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Keywords: Agricultural systems, Environmental changes, Middle and Late Holocene, Northwestern Iberia, Carpathology

Presentation Preference: Oral

Interpretative approaches gathering archaeological and carpathological data with broad palaeoecological data can provide relevant insights on the relation between environmental changes and the evolution of human societies and their agricultural systems. Northwest Iberia stands as a good study-case since abundant palaeoenvironmental studies allow us to understand the major trends in climate, vegetation, erosion events and even atmospheric pollution during the Middle and Late Holocene. This diverse and profuse array of information provides an excellent data set to contrast with the regional archaeological and carpathological records.
The main focus of this presentation will be the carpological data available for northwest Iberia, including unpublished material. Carpological data from late prehistoric and protohistoric sites allowed the identification of key-moments in agricultural history, and the introduction of some crops and the development of new social-ecological systems. These key-moments include the Middle/Late Bronze Age (c. 1800 – 700/600 BC) and the Iron Age (700/600 BC to the 1st century BC) and correspond to significant changes in Human societies as suggested by data regarding the evolution of settlement, technology and material production. In other features.

Developments in storage facilities are also recorded. Especially, underground storage (pits), that proved to be an important strategy for long-term preservation. Moreover, the palaeoenvironmental records suggest significant changes on several levels such as the climate and land cover. Increasing erosion events occur as the result of anthropogenic deforestation to obtain farmland and pasture. Besides their clear differences, these two important moments revealed important economic and social changes. Human communities became sedentary and a process of territorialization took place, enhancing the connection between settlements in Northwest Iberia, a region where good agricultural soils are not abundant.

In the first moment (Middle/Late Bronze Age), the oldest evidence of millet, (Panicum miliaceum), a spring crop, suggests changes in agricultural practices and territorial strategies. During the Iron Age, an agricultural system based on a diversity of crops, namely different cereals, existed. In particular, hulled wheats (Triticum dicoccum and Triticum spelta) which were good choices for undemanding and erosive soils.

These different environmental and archaeological records will be presented in order to address the main changes in land cover and land use, namely their relation with the evolution of agricultural strategies and social-ecological systems in Northwest Iberia.

TH5-14 Abstract 12
The anthropization of the Cantabrian Mountains (NW Iberia) during the Later Prehistory

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Keywords: Anthropization, Landscape Archaeology, Later Prehistory
Presentation Preference - Oral

This paper attempts to provide a historical narrative that accounts for the biography of the cultural landscapes of the Western part of the Cantabrian Mountains based on a social interpretation of archaeological data and paleo-environmental sequences. A diachronic perspective is adopted drawing on in the theoretical and methodological framework of Landscape Archaeology. This is achieved by analyzing the patterns of settlement and subsistence deployed by human groups during the five millennia that mediate between the emergence of agriculture and animal farming (c. 4800 BC) and the Roman conquest of the area under study (late first century BC). In light of the data considered for the mountainous area which separates Spanish contemporary regions of Asturias and León, the investigation reflects about the human experiences and the historical processes that intervened in the anthropization and the social construction of the cultural landscapes of the Later Prehistory in the area.

During the Neolithic there is a spread of agriculture and farming. This process can be perceived earlier in the coastal areas than up in the mountains. This resulted in the emergence of huminization processes of the environment characterized by an increase of open areas for pastures and crops related to iterative forms of production and settlement. Later in the Bronze Age, the anthropization of the territory significantly increased, revealing a certain tendency towards the territorialization of human groups. The Iron Age implied the almost complete adoption of sedentary forms of life by human groups. Iron Age communities developed new livestock and farming practices, now intensified with the emergence of stable crop fields. This new productive pattern led to the emergence of a compartmentalized and highly anthropized landscape around the hillforts. However, this general scheme shows some gaps and exceptions which should be considered in detail. In the first place, they could reveal the limits of the data available for the region; but, more interestingly, they might point out the divergence in the social or cultural livelihoods performed by the communities who inhabited the Cantabrian Mountains during the Later Prehistory.

TH5-14 Abstract 13
Human-environment interactions in the Alps: Archaeological and palaeoenvironmental approaches

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Keywords: archaeology, Ireland, palaeoenvironments
Presentation Preference - Oral

In this paper we outline the initial results of an integrated palaeoenvironmental and archaeological study from southeast Ireland, funded by RESTA (The Heritage Council, Ireland) which has been investigating changes in settlement patterns and subsistence from the late Bronze Age into the Iron Age as derived from extensive, well dated palaeoenvironmental data from ‘Celtic Tiger’ era development-led excavations. The project has compiled and critically assessed the evidence for lifeways and subsistence strategies derived from multiple archaeological sites, including data from faunal and macrofossil analyses and chronological modeling of radiocarbon dates. These data have been integrated with evidence for patterns of landscape change and human Our understanding of high altitude (European) alpine landscapes and the economic practices that developed therein has improved radically over the last 15 years, nevertheless there are still many challenges, and numerous geographical areas where little or no research has been carried out.

One of the issues facing archaeologists and palaeoenvironmental scientists working in these areas (between c. 1600 and 2600 m asl) is the patchy nature of our various datasets, moreover, human-environment interactions operate at many spatial and temporal scales, and the integration of problematic Archaeological and palaeoenvironmental evidence are proxies for human-environment interactions; in some instances, we can identify broad categories of economic activities, such as pastoralism and arable agriculture. In other cases, we can identify actual practices, such as pasture creation via forest burning, or the exploitation of specific animal species or the creation of structures for penning animals.

In this paper, we will consider evidence for the development of high altitude pastoralism in the French Alps during the Late Neolithic and Early Bronze Age via the integration of data-types that operate at different spatial and temporal scales; archaeology, palaeoecology, and sedimentary aDNA. Within the context of the Alps, we argue that these seemingly disparate data allow us to assess a specific and significant form human niche construction (i.e. pasture) during the Late Neolithc and Early Bronze Age. This can be considered a form of coevolution; the intensification and extension of pastoralism, which included high-altitude summering in the Alps. This was part of a process where a form of agriculture, and landscape management probably intersected with the extension of the lactase persistence gene via increased consumption of dairy products - a key stage in the evolution of the high profile and globally recognised alpine landscape. Human manipulation of this specific landscape category also intersects with the continued domestication of animals.

This contribution will present an integrated review of archaeological, palynological, anthropological and sedimentary aDNA from two areas of the French Alps. We will also consider the evidence for phases of landscape destabilisation and the relative importance of climatic and human impact on these sensitive landscapes, a story which starts just before 2000 BC.

TH5-14 Abstract 14
Chalcolithic-EBA farming, soil loss, and the development of a karst landscape in western Ireland

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Keywords: Chalcolithic, Early Bronze Age, land use
Presentation Preference - Oral

The limestone karstic landscape of the Burren in western Ireland has evidence for human habitation from the Mesolithic onwards. The Chalcolithic and Early Bronze Age periods, however, seem to have been periods of particularly intensive and extensive farming on the Burren. Survey and excavation on Roughan Hill, in the south-east Burren, has documented a dense concentration of habitation enclosures, field divisions, and ritual monuments dating to between c. 2300 – 1500 BC which appear to relate to a particularly intensive phase of farming activity on the Burren. This paper investigates whether this Chalcolithic – Early Bronze Age activity can be related to significant karst development on the Burren (through correlations with palaeoensoecological and palaeoastoral records) and also looks at whether contemporary climatic shifts might have played a role. This informs both our understanding of prehistoric farming practices and also the role of human activities in the formation of karstic landscapes.

TH5-14 Abstract 15
Seeing Beyond the Site: Later Prehistoric Landscapes of southeast Ireland

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Keywords: archaeology, Ireland, palaeoenvironments
Presentation Preference - Oral
activity derived from palaeoenvironmental records. The study opens up new perspectives on this critical period in Irish prehistory and also illustrates the methodological and theoretical challenges of interpreting archaeological and palaeoenvironmental data.

TH5-14 Abstract 16

Land use and vegetal biodiversity in the Iron Age landscape of Brittany (France)

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Keywords: Iron Age Brittany (WW-France), land use patterns, vegetal biodiversity
Presentation Preference: Oral

Biodiversity has been a popular research topic in the last decades. With the rapid current loss of biodiversity, estimated at about 5% per decade, it is easy to understand why. Palaeo-ecological research can provide insights into the relations between past vegetal biodiversity and environmental change. Climate changes and human activities are generally accepted to be the prime drivers behind these processes. Nevertheless, detailed analyses of the correlation between past human agency and vegetal biodiversity in Northwest Europe are still quite rare. In this paper we aim to reconstruct and explain spatio-temporal trends in past vegetal biodiversity by integrating data on vegetation dynamics, human subsistence economy and land use patterns. The landscape of Brittany (North-Western France) during the Second Iron Age (450-50 BC) is selected as a case study. Compared to many other parts of Northwest Europe, Brittany is rich in high-resolution palaeobotanical data. These allow for the reconstruction of the main long-term trends in vegetal biodiversity, and more generally of the changing fabric of the Breton landscape. At the same time, a detailed analysis of the Iron Age rural landscape of Gaul start to emerge due to a steep increase in archaeological data (aerial photography, surveys, developed and development-led excavations). On the eve of the Roman conquest, the landscape of Brittany was dotted with numerous farmsteads and had a ‘mosaic’ vegetal structure. In this paper we try to integrate these different types of data and assess how the results contribute to wider discussions on the link between human behaviour and biodiversity.

TH5-14 Abstract 17

Invisible Prehistoric sites: development of land use by Eurasian nomadic population

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Keywords: Bronze and Iron Age, land use pasturistial, seasonality

A new methodological approach used to detect seasonal campsites occupied by Bronze and Early Iron Age pastoralists living in the desert and steppe area in the South-East of the Russian Plain helped identify different subsistence and economic activities. Comprehensive studies of two types of the sites by employing the methods of archaeology, soil studies, geography, geomorphology, palynology, geochemistry, palaeobotany provided an opportunity to obtain conceptually new data on the location and operation pattern of winter and summer pastures and camps themselves. To identify temporary camps, it is important to identify those land areas located in proximity to the camps where grazing was the most suitable at certain times of the year, taking into account natural features. For the winter season it has been demonstrated that deeply cut gullies with rather steep slopes facing south, south-west and south-east are most suitable for winter grazing, determining the existence of temporary winter camps in such areas.

The arrangement of summer temporary camps demonstrates a reverse pattern. It is assumed that summer camps and pastures were located near streams on open wind swept watershed sections rather than near subordinate features of the relief. Such camps can be discovered only if the soil was overlaid by natural deposits, which may occur on sections with sand.
Keywords: Anthracology, palynology, trace fossils, Geoarchaeology, land use, paleoecology
Presentation Preference - Oral

We’ve hypothesized that such disturbances as forest clearing, burning, ploughing, grazing, and trampling on small watersheds in the forest-steppe transition zone can lead to a rapid and substantial increase in the surface run-off, mass transfer, and accumulation of colluvium in closed depressions and gulles within the catchment areas. Depopulation of the catchment area would, in contrast, cause the surface stabilization and either grassland or forest soil formation. The combination of pedological, ichnological, palynological, and anthracological studies was utilized to reconstruct the history of human occupation of 6 small watersheds on the East European Plain. The sites with a good archaeological record were used to form “training sets” for our study. From 4 to 8 cycles of erosion and accumulation occurred in our study sites during the Holocene.

Each cycle began with fires, leading to the increase in run-off and accumulation of colluvial fan deposits, and ended with the stabilization of the surface as grassland or forest was reestablished and an immature soil was formed. The cycles were correlated with the periods of human occupation of the catchment area known from the archaeological surveys and radiocarbon dated using the soil charcoal.

Sand and gravel size fractions of soils and colluvial deposits contained charcoal of trees and shrubs, herbaceous char, charred seeds and bone fragments, heated mineral aggregates, and insect and animal faeces. Eight type assemblages were described in association with various types of forest fires, swidden cultivation, permanent fields, woodland pastures, and open (frequently burned) pastures. Some criteria were proposed to discern the utilization of gullies as roads and droveways. The assemblages were compared with the pollen spectra from the same samples and trace fossil from the same soil horizons/ depositional layers to define a multi-proxy signature of each land use type.

Only a few of the multiple fire occurrences could be attributed to the natural forest fires, the others were associated with the land use practices. According to the radiocarbon dating of charcoal from the type assemblages, a combination of fire and grazing has triggered wide deforestation of potentially forested areas within the forest-steppe zone during the warm climatic phase of the middle Holocene (IV to III millennia BC, the Chalcolithic/Bronze Age). Small-scale deforestation associated with the swidden cultivation is dated here by VIII-XIII cent AD. Frequent burning of potentially forested areas as means of maintaining grazing grounds did not begin until – X cent AD. The widespread advance of pine in the Late Medieval time could be a direct result of the co-action of herbivory and linear erosion due to overgrazing. Signs of long-term cultivation (plough fields) appear in various regions of the forest-steppe in VII-X cent. AD. Both the Medieval Warming and growing networks of open fields contributed to the large-scale deforestation of the forest-steppe in X-XII cent. AD. That entailed a considerable expansion of home ranges of burning rodents, typical steppe inhabitants.

The results can be applied to reconstruct the land use history in areas with poor archaeological data, and determine when certain land use practices came in use.

TH5-14 Abstract 21
Changes in growth regularities in archaeological timbers as a proxy for the deforestation history

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Keywords: Dendrochronology, Landscape changes, Vilnius Lower Castle
Presentation Preference - Oral

Forests are an important component of land cover in temperate climatic zones and deforestation is regarded as a major process in human induced landscape degradation. New models estimating anthropogenic forest area changes are based on calculations of population history and the need of supporting cultivated land. Nevertheless, in some areas the need of forest products can overtake the need of agriculture resources of contemporary population. Large scale trade in forest products and extensive building activities intensify deforestation and cause bias in models based only on the population dynamics. Some corrections can be made by analysing landscape dynamics from the point of forest state dynamics.

Tree growing conditions are recorded in the regularities of annual tree-rings and the history can be detected using dendrochronological methods if sufficient material is available.

The presented study aims to evaluate forest state changes in the geographic region around the Lithuanian capital Vilnius over second millennium CE. Large amount of archaeological constructions are preserved in cultural layers of Vilnius Lower Castle site and excavated during archaeological investigation. Pine timber representing different centuries of the second millennium CE were analysed using dendrochronological methods. Several parameters were evaluated and compared and those with in modern pine forests: age curve of free-ring, i.e. regularity of tree ring width changes due to increasing age of trees, tree annual increment rate, and age structure of trees used for timbers in particular time period.

Regardless of heterogeneity of the replication of trees it became evident that the parameters differ in different periods throughout the millennium. Major shift to higher increment rates happened in the second half of the 15th c. and the 16th c. Tree age curve also became more expressed, and much younger trees started to be used, even for high social status buildings like Grand Duke’s palace. These changes clearly indicated changing state of forests and coincided with intensified timber export from Eastern Baltic to deforested Western Europe regions. Results suggest that timber trade between regions with different population density (and therefore forest cover) could be additional important factor affecting deforestation in timber supply regions.

TH5-14 Abstract 22
Investigation of soils from archaeological monuments using biological methods

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Keywords: ancient soil, Bolgar city
Presentation Preference - Oral

During thousand years of agriculture the total area of settlements and arable land reached a very significant scale. Due to the different systems of the people’s settlement in ancient and medieval times, it can be assumed that large areas of land in a particular moment of history had different forms of anthropogenic influence, traces of which are not currently recorded at the morphological level. It is assumed that the ancient evidence of human impact on the landscape would remain at the level of the soil biota, the most sensitive and mobile soil component. The aim of this work was to identify the soils which had anthropogenic impact in different historical periods, as well as reference sites, where soil developed without human intervention. The reconstruction of some aspects of agriculture in the territory of the ancient city Bolgar (X-XV centuries, Tatarstan, Russian Federation) has been carried out on the basis of archaeological, microbiological and biochemical data and has been obtained new data about anthropogenic impact.

TH5-14 Abstract 23
Following spits: Stone Age coastal adaptation and coastal morphology in the Narva-Luga region

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Keywords: Eastern Gulf of Finland, Holocene Stone Age, sea coast development
Presentation Preference - Poster

A model of coastal morphology development in Narva-Luga region at the Russian-Estonian border (south-east of the Gulf of Finland) in Middle and Late Holocene (5000-2000 cal. BC) was suggested basing on the last decade multicraft disciplinary studies. This model was improved and got chronological references basing on archaeological data – remains of Stone Age coastal settlements. Strict relations between sea shoreline and human settlements/hunting camps ended at the time of the first farming societies (Corded Ware tradition) appeared in the region.
**TH5 Science and multidisciplinarity in archaeology**

Extending the human provenancing repertoire: and that it is possible to get relevant archaeological information which is currently beyond reach.

Way are particularly welcomed, as well as discussions on the potential and limitations of these analyses. We hope that this session will show the potential of heavy stable and radiogenic isotopes (Nd, Pb) for archaeological sciences or present new developments in metals, building stones) or environmental samples from archaeological sites (e.g. speleothems, soils). These contributions should show the potential of these new techniques holistically great potential for a more integrated interpretation of the archaeological record and that it is possible to get relevant archaeological information which is currently beyond reach.

**TH5-15 Abstract 01**

**Extending the human provenancing repertoire: Neodymium isotopes**

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**Keywords** - Human provenancing, Isotope

Presentation Preference - Oral

Recent developments in mass spectrometry have made it possible to explore the potential of new isotopic systems for the provenancing of humans, complementing the existing systems: strontium (Sr), oxygen (O), hydrogen (H) and lead (Pb). The addition of another isotopic system to the isotopic human provenance repertoire can potentially provide us with more specific information on the region of origin and thus address some of the limitations that are still associated with the now commonly used isotopic techniques. This study reports on the viability of using neodymium isotopes (143Nd/144Nd) as a candidate to track the origins of humans. Due to the isotopic variations in the crust the samarium-neodymium isotope decay system has previously successfully been applied to identify the production centres of glass archaeological artefacts, usually in combination with oxygen or strontium isotope ratios. The tendency of the human body to bio-purify non-essential elements means that REE concentrations are however contained in the bone collagen which deteriorates over time. Mass spectrometry advances now allow trace element isotope analyses of bioapatite. First studies on Zn isotopes in blood showed its potential as a new dietary tracer. This contribution aims at testing the influence of diet on Zn isotopic compositions of bone and teeth. We investigated the Zn isotopic variability in bone and tooth enamel of mammals and archaeological human populations characterized by various diets, environmental contexts (arctic, arid, temperate) and historical periods. The samples were purified by column chromatography and the Zn isotopic ratios were measured using MC-ICP-MS. The isotopic composition of traditional food tracers (13C and 15N) has been assessed in parallel. We will show that the Zn isotopic composition in the bones and teeth is strongly influenced by the trophic level, but that some dietary and environmental factors can generate additional variability. We will discuss the advantages and limitations of this new tracer by comparing its performance to that of classic isotope analyses.

**TH5-15 Abstract 02**

**Zinc isotope compositions of bone and dental enamel and their relationship to diet**

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**Keywords** - archaeological sciences, dietary tracer, nontraditional isotopes

Presentation Preference - Oral

Isotopic analyses of carbon and nitrogen are conventionally employed in bioarchaeology for dietary reconstructions. These elements are however contained in the bone collagen which deteriorates over time. Mass spectrometry advances now allow trace element isotope analyses of bioapatite. First studies on Zn isotopes in blood showed its potential as a new dietary tracer. This contribution aims at testing the influence of diet on Zn isotopic compositions of bone and teeth. We investigated the Zn isotopic variability in bone and tooth enamel of mammals and archaeological human populations characterized by various diets, environmental contexts (arctic, arid, temperate) and historical periods. The samples were purified by column chromatography and the Zn isotopic ratios were measured using MC-ICP-MS. The isotopic composition of traditional food tracers (13C and 15N) has been assessed in parallel. We will show that the Zn isotopic composition in the bones and teeth is strongly influenced by the trophic level, but that some dietary and environmental factors can generate additional variability. We will discuss the advantages and limitations of this new tracer by comparing its performance to that of classic isotope analyses.

**TH5-15 Abstract 03**

**Hydrogen stable isotope ratios measured in bone collagen from Danish prehistoric samples**

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**Keywords** - Hydrogen, Bone, palaeoecol

Presentation Preference - Oral

Palaeodietsary studies commonly analyse 13C and 15N ratios in archaeological bone to infer past dietary habits, although δ15N ratios can be influenced by a range of factors other than diet (acidity, manuring, soil conditions, etc.). δ18O ratios have been shown to function as trophic level indicator (Birchall et al., 2005; Reyma and Hedges 2008), which can be very useful to aid our interpretation of the δ13C and δ15N ratios and improve our understanding of palaeodiетary habits and subsistence practices. Hydrogen in organic is consits of a non-exchangeable and exchangeable fraction; the latter will equilibrate with atmospheric hydrogen with atmospheric hydrogen from water vapor in the lab environment, resulting in meaningless values. This fraction needs to be calculated in order to obtain the non-exchangeable fraction which represents the true values. By applying a two-stage equilibration method, sample specific and process specific factors influencing exchange rates are compensated for (Meier-Augenstein et al., 2011). Recently developed standards packed in silver tubes containing water of known isotopic composition (Qil et al. 2010) can be analysed alongside solid samples in the same run, which is essential to avoid scale comparison. While this method is not novel (Bower et al., 2005; Meier-Augenstein et al., 2011, 2013), its application with the use of Qil et al’s standards to archaeological material is new. In this study we subjected bone collagen samples from prehistoric periods from the Limitford region in northern Denmark spanning the Mesolithic to the Viking Age to a two-stage equilibration method using the silver tube standards to obtain absolute δD values from the non-exchangeable hydrogen fraction.

Birchall et al. 2005 Rapid Comm. in Mass Spectrometry

Bower et al. 2005 Rapid Comm. in Mass Spectrometry

Meier-Augenstein et al. 2011 Rapid Comm. in Mass Spectrometry

Meier-Augenstein et al. 2013 Bioanalysis

Qi et al. 2010 Rapid Comm. in Mass Spectrometry

Reyma and Hedges 2008 Journal of Archaeological Science
TH5-15 Abstract 04
Stable isotope ratios and trace elements in modern mammal tooth enamel

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Keywords: bioapatite, isotopes, trace elements
Presentation Preference - Oral

Bioapatite from mammal tooth enamel is a popular biomaterial used in the reconstruction of palaeoenvironment and palaeodiet. It records information about the animal’s environment and diet on a sub-animal scale and is proven to be highly resistant to diagenesis, allowing the preservation of its original chemical composition through archaeological and geological timescales. In this study, stable carbon and oxygen isotope analysis are used as a stepping stone to investigate the use of other chemical proxies for the reconstruction of environment and diet from mammal teeth. Concentration profiles of trace element distributions (measured with μXRF and cross-validated with Laser Ablation ICP-MS) and stable isotope ratios ([δ13Cep, δ18Oc & δ18Oep]) are combined to test the reliability of trace element profiles from mammal teeth in recording seasonal changes in environment and diet of the animal.

A method is presented that links the various geochemical records within a tooth sequence using mineralization sequences and oxygen isotope seasonality. This way, a 3 year trace element and stable isotope record from horse tooth enamel is created showing seasonal variation in trace elements and isotope ratios linked to changes in climatic conditions and diet through the animal’s lifetime.

This study shows how an entire new set of trace element proxies, that can be measured quickly and non-destructively, may yield information on palaeoenvironment and palaeodiet. These trace element measurements yield information from precious archaeological samples that could otherwise be obtained solely through destructive sampling. The versatility of the μXRF and LA-ICP-MS methods opens up a wide range of applications for trace element analysis in archaeology.

TH5-15 Abstract 05
The geochemical relationship between soil, plant and streamwater: implications for migration studies

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Keywords: Geographical discrimination, multi-element composition, Strontium isotopes
Presentation Preference - Oral

Strontium isotopes (87Sr/86Sr) and rare earth element (REE) analyses of rock, the leachable fraction of soil, plant and surface waters are applied as chemical proxies to assess chemical reservoir interactions, element bioavailability and geographic variability. These processes are the basis for geographic discrimination and associated archaeological provenancing. 53 biosphere samples were collected from a small geographic area in Co. Meath, a region of Ireland that has highly variable bedrock and surficial geology and hosts significant archaeological sites including, Newgrange, the Hill of Tara and Knowth. These multi-element and isotope geochemical proxies confirm this region and the high degree of spatial variability in 87Sr/86Sr highlights the inherent requirement for high-density sampling in order to isotopically characterise distinct reservoirs. The results of this study provide a baseline of biophore geochemical data that can be applied to archaeological studies examining the past migration of populations in this archaeologically important region.

TH5-15 Abstract 06
The potential of large-scale seasonality studies, results from the Farasan Island shellmound complex

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Keywords: LIBS, Seasonality, Shellmound
Presentation Preference - Oral

The Farasan shell mounds are one of the largest traces of the Arabian Neolithic Period, with over 3,000 sites having accumulated between 7,000 and 4,000 cal BP. Seasonality data based on stable oxygen and carbon isotopes have determined year-round exploitation of shellfish.

Additionally, they revealed patterns of seasonal stratification within individual layers. This was used to determine sub-annual accumulation rates, exploitation intensity, and degrees of bioturbation within the stratigraphy. This dataset is now being analysed more thoroughly by using Laser Induced Breakdown Spectroscopy (LIBS). LIBS is a rapid and cost-effective laser ablation method, that is able to measure the elemental composition of shell carbonates to determine season of death. By providing a high sampling resolution (<100μm) and short processing time, large sample sizes can be analysed in great detail. In turn, it allows us to analyse exploitation and accumulation patterns of the Farasan islands in more detail. This study aims to answer questions regarding (1) how analysing a larger number of shells per layer changes the interpretation of site seasonality, (2) whether seasonal layering of shell deposits are singular or repeated events, and (3) how accumulation rates based on seasonality can vary throughout the deposit and tells us more about the processes behind shell deposition.

TH5-15 Abstract 07
Archaemetrical studies of pottery

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Keywords: archaemetrical research, chemical analysis, pottery
Presentation Preference - Oral

The basic carrier of information on the project in question is pottery from Wielkopolska’s sites dating back to the early pre-roman iron age. The multi-level analysis of the existing source base assumes its full elaboration with regards to classical archeological description, connected comparatively with an innovative use of the methods of chemical analysis. The analysis will cover archeological materials obtained mostly as a result of a source search query conducted in museums, but also among entities that currently conduct excavation research. The chemical tests will be performed on the pottery using three independent procedures of samples preparation. In the first procedure, a ground part of pottery will be subject to extraction with hydrochloric acid. In the second procedure, the possibility of leaching components of a sample from the external layers of the tested pottery will be determined; so as to compare the results with the results of non-destructive analyses (e.g. XRF) where only the surface of a sample is analyzed representing the acid-leached fraction of the surface of the tested samples. In the third procedure, a ground part of pottery, will be subject to decomposition using hydrofluoric acid at room temperature in closed Teflon vessels. After sample preparation the content of the selected elements in the solutions obtained will be determined: by spectrometric techniques: flame atomic absorption (FAAS) or flame optical emission (FOES) spectrometry, microwave induced plasma optical emission spectrometry (MPI-OPES) and inductively coupled plasma optical emission spectrometry (ICP- OES). The elaborated procedures and instrumental analytical techniques enable performing tests that have so far been practically unavailable in archaemetrical research.

TH5-15 Abstract 08
Elemental and Sr/Nd isotopic investigation of late Hellenistic to early Roman glass bowls and sand raw materials from Lebanon

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Keywords: Nutum glass, Sand raw materials, Isotopes
Presentation Preference - Oral

Excavations in the Souka area of Beirut, Lebanon, not only revealed large amounts of glass artefacts from the Hellenistic to the Islamic period but also remnants of primary tank furnaces, dating to the early 1st century CE. We determined the major elemental compositions of 66 mid-2nd century BCE – early 2nd century CE cast glass bowls from Beirut via electron microprobe. 41 beach sand samples taken along the coastline of Lebanon were analysed for their major elemental compositions via ICP-OES. A selection of sand and glass samples were subjected to Sr and Nd isotopic analysis. Results are compared to the composition of glass from the tank furnaces and Levantine sandstone to investigate the possibility of a local origin.
All glasses were soda-lime-silica in composition, with natron as a flux. Strongly coloured glasses were coloured with Co, Cu and Mn. Pale coloured glasses having varying Mn%, up to 1.9%, suggesting that they were intended to be coloured. Colourless bottles can be divided into three groups: Mn-, Pb- and mixed Mn-Pb-coloured glass. All Mn-coloured, pale and strongly coloured vessels have closely similar base glass compositions to glasses from the tank furnace 1, suggesting local production and working. The Pb-coloured glass was made from a different sand source with higher SiO2 and lower A12O3 and CaO. Mixed Mn-Pb-coloured glass has intermediate compositions, suggesting they are the result of recycling. Sr and Nd isotopic analyses confirm the different primary origin of the Pb-coloured glass. The isotopic signatures of the other glasses correspond well to those measured in some of the Lebanese sands, suggesting they were indeed produced locally.

1 S. Jennings, Vessel glasses from Beirut (Bey 008, 007 and 045), Beryll Archaeological Studies 46-48, 2006.

are able to detect elements in traces; these data, in prehistoric archaeometallurgy have been used not only to understand the composition of a prehistoric alloy, but even to understand which ores have been exploited to obtain the metal. These could be many ways of using these data. Recently, during the study of copper objects, it has been noticed that there is a pattern of particular concentration of heavy elements traces in specific parts of objects from Early Bronze Age Anatolian contexts. After some speculations, it may be possible to hypothesise that these concentrations are due the precipitation of heavy elements in a liquid state copper melt. These indicators may allow identification of the orientation of objects during the casting phase, giving important data about the technologies used in the production of items and item categories, allowing production categories to be compared within object or type categories.

TH5-15 Abstract 13

Chemical and physical composition of disturbed and less disturbed soil of the Dūkšteliai 1 site

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Keywords: Early Mesolithic and Neolithic-Broneze Age, Geochemical and LOI analyses, Human inhabitance

Presentation Preference - Poster

In 2013 an archaeological investigation of the first inhabitance of River Neris basin in Lithuania has been initiated. As a part of the research, a newly discovered prehistoric site Dūkšteliai 1 on the lake Dūkštelis shore (Eastern Lithuania) was excavated in order to gather some new archaeological data for comparison with the material from other prehistoric sites in River Neris basin, and also to gain additional knowledge about the first inhabitants in this region. After excavating 100 m2 of the site structures were uncovered which, according to the first artefacts typology, correspond to Early Mesolithic or Neolithic-Broneze Age. Also the new palaeobotanical and geochemical data on Dūkštelis Lake bottom deposits indicated at least two episodes of human inhabitance at the lake shore.

In order to reveal the functional use of the prehistoric settlement elements, the studies were conducted for closer study – a probable hut and a hearth. The research was interdisciplinary: together with archaeological methods of investigation – examination on the distribution of the finds (fint tools and their processing refuse, burnt bone, charcoac pieces, ceramic fragments) and their correlation with the two structures - several natural science methods were used to make a research on the content of the structures. Ground formation and microscopic bioarchaeological research was done in order to find macro-botany remains that could reveal some details about prehistoric people diet. Geochemical analysis and loss on ignition method (LOI) were also used to find out if there are any elements significant for interpretation but undistinguished during the archaeological excavation.

The samples for geochemical and LOI analyses were collected from the structures as follows: in the middle of the structure, 20 cm from the centre and in periphery. It was presumed that the latter represented less disturbed soil. Determination of major and trace elements Al, Ba, Br, Ca, Cr, Cu, Fe, Ga, K, Mg, Mn, Na, Nb, Ni, P, Pb, Rb, Si, Sr, Ti, Zn, S was done using energy-dispersive x-ray fluorescence SpectroXepos equipment and the Turbotronic calibration method for pressed pellets. Also samples were dried at the temperature of 110°C; then heated at 550°C and 950°C to burn out the organic matter and carbonates, respectively.

As a result, insignificant geochemical difference between samples has been observed and only minor inequality of element contents could be seen. Using Ward’s method and Euclidean distances a tree diagram for 24 variables was drawn and trace elements Al, Ba, Br, Ca, Cr, Cu, Fe, Ga, K, Mg, Mn, Na, Nb, Ni, P, Pb, Rb, Si, Sr, Ti, Zn, S was done using energy-dispersive x-ray fluorescence SpectroXepos equipment and the Turbotronic calibration method for pressed pellets. Also samples were dried at the temperature of 110°C; then heated at 550°C and 950°C to burn out the organic matter and carbonates, respectively.

This paper will argue that in order for the invaluable insights from palaeoecological studies on wetlands to be informative on well-preserved remains cannot be denied. Often lacking on dryland sites, they provide information on past economies and subsistence, and allow detailed reconstructions of human-environment interaction. Despite this, the results of palaeoecological research on wetland sites do not always impact beyond the sub-discipline of wetland archaeology, which remains somewhat isolated from mainstream archaeology. If palaeoecological studies of wetland sites are to contribute to our general understanding of animal husbandry, agricultural developments or environmental change at various spatial and temporal scales, wetland archaeologists must contextualise wetland sites in a broader chronological and geographical framework. This paper will argue that in order for the invaluable insights from palaeoecological studies on wetlands to be informative on well-preserved remains cannot be denied. Often lacking on dryland sites, they provide information on past economies and subsistence, and allow detailed reconstructions of human-environment interaction. Despite this, the results of palaeoecological research on wetland sites do not always impact beyond the sub-discipline of wetland archaeology, which remains somewhat isolated from mainstream archaeology. If palaeoecological studies of wetland sites are to contribute to our general understanding of animal husbandry, agricultural developments or environmental change at various spatial and temporal scales, wetland archaeologists must contextualise wetland sites in a broader chronological and geographical framework. 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TH5-16 Abstract 03
A 8000 years history of climate and environmental change in South Greenland

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Keywords: Climate, palaeo-environment, isotopes, Greenland, Pleistocene, Holocene

This presentation reports on the results of multiproxy palaeoenvironmental investigations carried out in association with archaeological survey and excavation of later prehistoric woodwork/trackways at Littletone Bog, Co Tipperary, Ireland. The site has a long association with palaeoecological research in Ireland, beginning with pioneering work carried out by Frank Mitchell at Littletone in the 1950s and 1960s that has provided a basic framework for the vegetation history of Ireland in the late Pleistocene. Mitchell’s palynological work emphasised the significant effect that past human societies have had on shaping environments in Ireland, and hinted at complex interrelationships between environmental change and human activity. The archaeology of Littletone Bog, now a drained and milled peat production site, was surveyed in 2008 and this was followed by targeted excavations carried out in 2008 in advance of peat extraction; excavation revealed over 50 archaeological features, mostly wooden trackways, of which 24 features have been radiocarbon dated ranging from the Early Bronze Age (ca.3600 cal BP) to the Iron Age (ca.2000 cal BP). A high-resolution multiproxy palaeoenvironmental record from the site was developed to provide palaeoenvironmental context for the rich archaeological record, and to assess the interactions between human activity and past environmental change at the local scale. This record, spanning from ca.4000 cal BP onwards, comprises testate amoebae, plant macrofossil, peat humification and pollen data. The testate amoebae, plant macrofossil and humification-derived bog surface wetness (BSW) records show broad agreement, but comparisons with recently published regional climate reconstructions indicate that the BSW record of Littletone Bog is influenced by the complex interactions between regional climatic forcing, autogenic internal bog processes, and other contingent factors. Regional-scale comparisons between peatland BSW and archaeological records indicate that there is no simple linear relationship between trackway construction and environmental conditions, a finding that is broadly supported by the data from Littletone; however, the timing of trackway construction at Littletone does indicate that localised, perhaps partly internally-driven, BSW changes may have had an important influence. The recent work at Littletone Bog, therefore, builds on the work of Mitchell by providing further detail into the relationships between human activity and Holocene environmental change in central Ireland; whilst broad patterns in these relationships are becoming clearer, the need for greater detail at the local scale is highlighted. Investigations of muliproxy bog production data provide a key opportunity to examine the complex interactions between both autogenic and allogenic environmental change and human activity.

TH5-16 Abstract 04
Reconstructing cattle management in Neolithic Switzerland using multi-isotopic analysis

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Keywords: Isotopes, Cattle management, Neolithic, Switzerland

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TH5-16 Abstract 05
Insights into crannog occupation phases from National Sites and Monuments Record databases

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Keywords: Crannog, GIS, Wetland, Medieval, Iron Age, Ireland, Scotland

This presentation reports on the results of multiproxy palaeoenvironmental investigations carried out in association with archaeological survey and excavation of later prehistoric woodwork/trackways at Littletone Bog, Co Tipperary, Ireland. The site has a long association with palaeoecological research in Ireland, beginning with pioneering work carried out by Frank Mitchell at Littletone in the 1950s and 1960s that has provided a basic framework for the vegetation history of Ireland in the late Pleistocene. Mitchell’s palynological work emphasised the significant effect that past human societies have had on shaping environments in Ireland, and hinted at complex interrelationships between environmental change and human activity. The archaeology of Littletone Bog, now a drained and milled peat production site, was surveyed in 2008 and this was followed by targeted excavations carried out in 2008 in advance of peat extraction; excavation revealed over 50 archaeological features, mostly wooden trackways, of which 24 features have been radiocarbon dated ranging from the Early Bronze Age (ca.3600 cal BP) to the Iron Age (ca.2000 cal BP). A high-resolution multiproxy palaeoenvironmental record from the site was developed to provide palaeoenvironmental context for the rich archaeological record, and to assess the interactions between human activity and past environmental change at the local scale. This record, spanning from ca.4000 cal BP onwards, comprises testate amoebae, plant macrofossil, peat humification and pollen data. The testate amoebae, plant macrofossil and humification-derived bog surface wetness (BSW) records show broad agreement, but comparisons with recently published regional climate reconstructions indicate that the BSW record of Littletone Bog is influenced by the complex interactions between regional climatic forcing, autogenic internal bog processes, and other contingent factors. Regional-scale comparisons between peatland BSW and archaeological records indicate that there is no simple linear relationship between trackway construction and environmental conditions, a finding that is broadly supported by the data from Littletone; however, the timing of trackway construction at Littletone does indicate that localised, perhaps partly internally-driven, BSW changes may have had an important influence. The recent work at Littletone Bog, therefore, builds on the work of Mitchell by providing further detail into the relationships between human activity and Holocene environmental change in central Ireland; whilst broad patterns in these relationships are becoming clearer, the need for greater detail at the local scale is highlighted. Investigations of multiproxy bog production data provide a key opportunity to examine the complex interactions between both autogenic and allogenic environmental change and human activity.
THS16-06 Abstract 06

The Early Iron Age 'lake village' at Black Loch of Myrton

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Keywords: Crannog, lake village, Iron Age, Scotland

Presentation Preference - Oral

The discovery of the remains of a spectacularly well-preserved settlement at Black Loch of Myrton, South West Scotland has opened up the possibility for an investigation of an early Iron Age society in northern Britain that goes far beyond what has been previously possible. With recent breakthroughs in dendrochronological dating of earlier prehistoric structures in Scotland it is now possible to approach issues of structural duration on a human scale, meaning that models for the iron age societies that built lake settlements in this area can be constructed to a level of detail never previously possible. This paper will present the archaeology of the Black Loch village recorded so far, and consider the hypotheses that will be tested through the multidisciplinary palaeoenvironmental techniques used by the Celtic Crannogs project.

THS16-07 Abstract 07

Investigating Iron Age lakeside settlements within their palaeoenvironmental context

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Keywords: Crannog, sediment, wetland

Presentation Preference - Oral

Palaeoenvironmental methods offer the opportunity of retrieving information from a range of proxies around lakeside settlement usage that would otherwise be difficult to obtain without excavation and can augment studies where excavation is possible. These methods also allow us to place these sites within a wider environmental context which can aid our understanding of local and regional conditions across the time period in question. Sediments are retrieved both on and adjacent to these structures and can be analysed for ecological, biological and environmental data.

Here, we present palaeoentomological data, in particular Coleoptera (beetles) and Chironomidae (non-biting midges), from archaeological excavation deposits and parallel lake core sediments from Black Loch of Myrton, Scotland. This Iron Age lochside settlement consists of a small number of structures constructed on peat/fen material at the margins of a small, productive loch. The main aim of the work is to inform our understanding of living conditions on the site, any associated impacts upon the nearby lake system and explore the wider implications for our understanding of lakeside settlements of this period. Beetle remains provide an understanding of both the environmental conditions across the site and on-site activities. Analytical indications include beetle fly remains, ecoparasites (e.g. fleas), characteristic of decomposing floor litter layers and less than salubrious living conditions. Chironomidae, from a parallel lake core indicate a shallow, productive lake system showing nutrient changes over long timescales, and highlight the effects of lake settlement construction on the adjacent small lake system. Results are compared with other lakeside sites and crannogs of comparable situation to provide an overview of living conditions associated with these types of sites.

The results of the work form part of a larger project that uses survey, palaeoenvironmental, biological and DNA analyses to study crannog and lakeside sites across Ireland and Scotland to study patterns in construction, function and longevity of these monuments, across wider geographical scales. The Celtic Connections and Crannogs project, funded by AHRC, sets out to re-examine crannogs as both a cultural and environmental phenomenon that link Iron Age and Medieval communities of SW Scotland and N Ireland.

THS16-08 Abstract 08

How could Crannogs impact on lake environments?

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Keywords: Crannog, lake village, Iron age, scotland

Presentation Preference - Oral

Crannogs, or artificial islands, were constructed during the Iron Age to Medieval period throughout Scotland and Ireland. At least 1500 crannogs are recognised, but little is known about their longevity and continuity of use, and they are difficult and expensive to excavate. An alternative, or compliment to excavation is to assess these questions through the impacts of crannog construction and use on adjacent lake sediments. However, it is unclear what the impact of crannog construction and use has been on lake environments.

Using sediment cores we investigate crannogs in ten lakes and one archaeological site. The cores will be analysed for loss-on-ignition, stable carbon and nitrogen isotopes, and high-resolution XRF (XRF) to highlight input of clay, gravel, and stones from crannog construction. Increased loading of heavy metals (Cu, Zn) might be related to metalworking on crannogs. In addition, the analysis of pollen, invertebrates, and ancient DNA will provide insights into land use around the lakes and the conditions on the crannogs themselves. Changes in C:N ratios, diatoms, biogenic silica, and invertebrates will demonstrate how crannog construction and use are driving changes in lake environments. Preliminary results indicate that XRF data (Cu, Ti, Zn) corroborate sedigraphic analysis and can be used to distinguish periods of crannog construction and use. In one of the sites, Lough Yoan, diatom assemblages indicate a substantial increase of nutrients during this period. The increased variety of submerged substrates due to crannog building also led to a more diverse cladoceran assemblage.
Insights into the occupation of a Scottish Iron Age wetland village using organic geochemistry

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Keywords: Human-environment interactions, Organic geochemistry, Wetland settlement

Presentation Preference - Oral

The first wetland village discovered in Scotland – Black Loch of Myrton, exhibits excellent preservation of early Iron Age life. It is therefore an excellent opportunity to explore how Celtic people lived and interacted with their environment. This study uses organic geochemistry to answer key questions about the settlement: how many construction and occupation phases occurred? What activities took place and how did they vary over time?

We reconstruct environmental conditions during village development using lipid biomarkers, organic molecular fossils that can be traced back to known biological precursors, and carbon isotopes from a sediment core recovered from the centre of the wetland. These results are compared with other regional climatic reconstructions to explore the role prevailing environmental conditions had on the start of the roundhouse construction and the demise of the village. Human-environment interactions within the wetland are assessed using biogenic silica concentrations, a measure of the abundance of the siliceous primary producers within the ecosystem, which reveal overall changes in aquatic productivity. The extent to which these changes can be attributed to the addition of nutrients from human and animal waste and changes in land use practices is currently being investigated by quantifying sterols, a group of biomarkers that are characteristic of faecal matter input.

In addition, a suite of lipids biomarkers taken from a sediment core from within the roundhouse provides insight into Iron Age activities by using pyrolytic polycyclic aromatic hydrocarbons to reveal fire regimes, n-alkanes to suggest changes in the surrounding vegetative landscape and cropping practices, and faecal steroids and bile acids to indicate the presence of animals within the roundhouses. Changes in the intensities of these activities and the amount of human faecal input reveal how the wetland village dynamics and uses altered over time. Combining these organic geochemical analyses with archaeological investigations provides a more holistic site interpretation and, when compared with other Celtic Iron Age sites, helps to build a clearer picture of societal functioning and change over this time period.

References

TH5-16 Abstract 10
Lake sediment DNA to trace past landscape and agricultural activities: the importance of taphonomy

Author - Dr. Gigant-Couve, Charline, University of York, York, United Kingdom (Presenting author)
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Keywords: Agriculture, lake sediment DNA, taphonomy

Presentation Preference - Oral

During the last decade, an increasing number of studies were interested in the use of lake sediment DNA to trace past landscape changes (plant DNA), agricultural activities (plant, mammal and bacteria DNA) as well as the human presence (human-specific bacteria DNA). However, as all sedimentologists know, the sedimentation in a lake can vary temporally and spatially depending of the variations of processes at the origin of the sediment formation. Moreover, depending on the geological, topographical, climatic and ecological contexts, the sedimentation can be very different from a lake to another. These lake sediments characteristics might affect the aDNA archiving in a various ways including potential biases related to both, the taphonomic processes (DNA source, transfer and deposit) and the analytical process. Consequently, it is now crucial to study these processes to ensure reliable interpretations of the lake sediment DNA results and to improve its potential for palaeoenvironmentalists, archaeologists and historians. In this aim, we combined sedimentological/geochemical analyses with DNA metabarcoding analyses (focused on plants and mammals) on three different mountain lake-catchment systems in the Alps (different relative to their physico-chemical and biological characteristics). We showed the extracellular aDNA retrieved from the sediment mainly comes from upper soil horizons and is transported to the lake being fixed into/onto soil particles. Lakes with high detrital inputs are thus more suitable to archive terrestrial DNA than lakes dominated by autochthonous sedimentation. Furthermore, the hydrographical web has to be well developed to provide a good spatial representativeness of possible plant patches in the catchment. Specific chemical/biological conditions affecting aDNA preservation and/or analysis success were also proposed as explanation for the non-detection of aDNA in one of the lakes. Other less predictable factors, e.g. pastoral practices and animal behaviour, also affect the archiving of aDNA from domestic animals. In particular, determining the type of source of DNA (“point” vs “diffuse”), these factors will affect the detection probability of the animals. All the factors affecting the aDNA record in lake sediments can change over time and can thus significantly affect the reconstructions of plant cover and livestock farming/pasturing histories.

TH5-16 Abstract 11
ARCHAEOLOGY, LANGUAGE AND GENETICS: IN SEARCH OF THE INDO-EUROPEANS

TH5-17 Abstract 01
Population Genomics of Bronze Age Eurasia

Author - Assoc. Prof. Sikora, Martin, University of Copenhagen, Copenhagen, Denmark (Presenting author)
Keywords: Ancient DNA, Genetics, Migrations
Presentation Preference - Oral

The Bronze Age of Eurasia (around 3000–1000 BC) was a period of major cultural changes. However, it has been debated for decades if the main cultural changes that occurred during this period resulted from the circulation of ideas or to which extent they were accompanied by human migrations. To investigate these questions, we sequenced low-coverage genomes from 101 ancient humans from across Eurasia. We show that the Bronze Age was a highly dynamic period involving large-scale population migrations and replacements, responsible for shaping major parts of present-day demographic structures in both Europe and Asia. We find genetic evidence for the expansion of the Yamnaya culture from the Pontic-Caspian both into North Eastern Europe as well as into Central Asia. Our findings are consistent with the hypothesized spread of Indo-European languages during the Early Bronze Age.

TH5-17 Abstract 02
What ancient DNA can tell us about the origin and spread of Indo-European languages

Author - Dr. Haak, Wolfgang, Max Planck Institute for the Science of Human History, Jena, Germany (Presenting author)
Keywords: ancient DNA, Indo-European, prehistory
Presentation Preference - Oral

Ancient DNA studies on Mesolithic, Neolithic and Bronze Age individuals from Western Eurasia have recently thrown fresh light on migrations in Europe’s prehistory. The Early Neolithic period in Europe (~8,000-7,000 years ago) was characterized by closely related groups of early farmers, which were different from indigenous hunter-gatherers, while Russia was inhabited by a distinct population of eastern hunter-gatherers with affinity to Paleolithic Siberians. The Middle Neolithic saw a resurgence of hunter-gatherer ancestry throughout much of Europe, while the contemporaneous Yamnaya pastoralists of the Russian steppes shared about half of their ancestry with the preceding eastern European foragers and the other half with Caucasian hunter-gatherers. This ‘Yamnaya-like’ steppes ancestry arrives in Central Europe ~4,500 years ago, as Late Neolithic Corded Ware individuals indicate that they are most likely associated with Yamnaya culture, while the radiocarbon analyses of one individual ‘centrally located’ in the tumulus show that it dates to 2620-2470 BC. The molecular results at date reveal the presence of at least two distinct maternal lineages in this population, in most cases rare haplotypes for the modern day European population. These results are part of an ongoing project and a future point of concern is to assess the genetic relationship between this Bronze Age population and one dated to the pre-modern period discovered in the same geographic area.

This study was supported by funding from the project Genetic Evolution: New Evidences for the Study of Interconnected Structures (GENESIS). A Biomolecular Journey around the Carpathians from Ancient to Medieval Times. (CNCSIS-UEFISCDI_PNI_PCCA_1153/2011).

TH5-17 Abstract 03
The story told by Mireasa (Constana) Bronze Age barrow – interdisciplinary approach

Author - PhD student Rusu, Isana, Babes Bolyai University/ Interdisciplinary Research Institute on Bio-Nano-Sci, Cluj-Napoca, Romania (Presenting author)
Keywords: Ancient DNA, Indo-European, Religion, Ritual, Sacrifice
Presentation Preference - Oral

Ancient DNA studies on Mesolithic, Neolithic and Bronze Age individuals from Western Eurasia have recently thrown fresh light on migrations in Europe’s prehistory. The Early Neolithic period in Europe (~8,000-7,000 years ago) was characterized by closely related groups of early farmers, which were different from indigenous hunter-gatherers, while Russia was inhabited by a distinct population of eastern hunter-gatherers with affinity to Paleolithic Siberians. The Middle Neolithic saw a resurgence of hunter-gatherer ancestry throughout much of Europe, while the contemporaneous Yamnaya pastoralists of the Russian steppes shared about half of their ancestry with the preceding eastern European foragers and the other half with Caucasian hunter-gatherers. This ‘Yamnaya-like’ steppes ancestry arrives in Central Europe ~4,500 years ago, as Late Neolithic Corded Ware individuals indicate that they are most likely associated with Yamnaya culture, while the radiocarbon analyses of one individual ‘centrally located’ in the tumulus show that it dates to 2620-2470 BC. The molecular results at date reveal the presence of at least two distinct maternal lineages in this population, in most cases rare haplotypes for the modern day European population. These results are part of an ongoing project and a future point of concern is to assess the genetic relationship between this Bronze Age population and one dated to the pre-modern period discovered in the same geographic area.

In this manner, a more comprehensive image regarding the cultural and social status of Bronze Age individuals from the southeastern part of Romania, a geographic region that is scarcely represented by genetic data in scientific literature, can be gleaned. Integrating present genetic results for representatives of this population with their contemporaries from other geographic locations may reveal genetic links associated to migratory events. First insights on burial ritual and funerary inventory of these individuals indicate that they are most likely associated with Yamnaya culture, while the radiocarbon analyses of one individual ‘centrally located’ in the tumulus show that it dates to 2620-2470 BC. The molecular results at date reveal the presence of at least two distinct maternal lineages in this population, in most cases rare haplotypes for the modern day European population. These results are part of an ongoing project and a future point of concern is to assess the genetic relationship between this Bronze Age population and one dated to the pre-modern period discovered in the same geographic area.

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TH5-17 Abstract 04
Scandinavian Bronze Age rituals, and their Indo-European background

Author - Prof. Anders, KaLL, Uppsala University, Uppsala, Sweden (Presenting author)
Keywords: Burial ritual, Cremation, Cosmology, Indo-European, Religion, Ritual, Sacrifice
Presentation Preference - Oral

In my research I try to interpret remain of ancient Scandinavian ritual, against a larger Indo-European background. Like the Indo-European languages, is also Indo-European religion an old concept, first constructed in the 1800s, when the comparative study of religion emerged as a method. It seemed to be basic features that recurred in the religions practiced by different peoples who spoke Indo-European languages, and that parallel to language, important elements of religious beliefs, myths and rituals could also be preserved over time.

In the last few years, there has been a very rapid development in the field of ancient DNA that has revolutionized the question of Indo-European migration in prehistory. The question is no longer whether there is a connection between early Indo-European peoples, but how complex the relationships are and how they occurred. In 2014 and 2015 came finally the first really convincing DNA studies regarding the ancient Indo-Europeans, results that fully support the ideas of Indo-European spread by migration. Far hundred percent proof that this migration really brought languages, is missing still, of course, but it could be assumed with almost certainty. According to the hypothesis I try to test imly research, essential features of mythology and ritual was also spread in this context, although changes of these obviously have taken place over time, in the same way as with the language.

The homology of the creation myths is one such basic cosmological idea. The concept of homology here refers to the belief that one entity is created using the matter in another entity. They are alikefor, that is, alternative guises of each other. As
regards both fire-sacrifice, and also cremation, the link to homology is evident. One significant example is the Vedic fire-rituals (including cremation of the dead), that are performed as repetition of the creation and has a deep cosmological significance. This cosmology - with parallels in several old Indo-European religions, including for instance the Old Persian (Zoroastric) religion, Old Baltic, Germanic and Old Norse beliefs had a fundamental impact on the eschatological beliefs, and accordingly on the burial rituals. Fresh and earth, for example, are considered to be of the same material substance and can thereby be transformed into each other. In the same way, bones, the hard part inside the soft flesh, are equated with the stones in the earth and with rocks and mountains, while hair is associated with plants. Life consists of a limited number of elements from which everything is composed.

My paper will discuss this with focus on finds from some recently excavated ritual places in eastern Sweden, and interpret the findings in the light of a broader Indo-European background. I will use the Old Vedic ritual system as one important comparative, and also focus on a discussion of the interpretations in the light of the new results from ancient DNA studies.

THS-17 Abstract 05
Can scholars envisage a Baltic Origin of Homer’s Epic Tales?
Author - Prof. Bandelli, Giuliana, Università Cattolica del sacro Cuore Milano, Milano, Italy (Presenting author)
Keywords: Bronze age, Homer, Metal working around the Baltic Sea
Presentation Preference - Oral

According to a recent challenging hypothesis by the scholar Felice Vinci, the real setting of the Iliad and the Odyssey can be identified not as the Mediterranean Sea, where it proves to be undermined by many incongruities, but rather in the North of Europe. The sagas that gave rise to the two poems came from the Baltic regions, where the Bronze Age flourished in the second millennium B.C. and where many Homeric places (Troy, Ithaca, Faro) along with Ulysses’ wanderings can still be identified today. Moreover, this archaic Achaean civilization extended over all the Baltic coasts, so, for instance, along the Swedish coasts, where today’s Bay of Norderjelta is the ancient Aula, where the Achaean fleet, according to the Iliad, gathered before sailing for Troy. As regards the Baltic Republics (Estonia, Latvia, Lithuania) there are many convergences with Greek mythology. The blond Achaean who founded the Mycenaean civilization in the Aegean in the 16th century B.C. brought these tales from Scæantra to Greece after the end of the “post-glacial climatic optimum”. They then rebuilt their original world – where the Trojan War and many other mythological events had taken place – farther south in Mediterranean waters, transferring significant names from north to south. Through many generations, they preserved the memory of the heroic age and the feats performed by their ancestors in their lost homeland, and this oral tradition was put in writing around the 8th century BC, when the alphabetical writing was introduced in Greece. According to Felice Vinci’s theory, both the Homeric poems and the rest of Greek mythology are the last memory of the arts and events happened in the lost Nordic homeland of their Achaean ancestors, before they moved towards the South of Europe. This new perspective conforms to the most recent views of archaeology: the “radiocarbon revolution”, based upon radiocarbon dating, adjusted with dendrochronology, has backdated of many centuries the rise and development of the European Bronze Age and, on the other hand, a very ancient city, dating back to the third millennium BC, was recently found by Swedish archaeologists in the site of Bjåstamon, near Hernosand.

THS-17 Abstract 06
The Settlement System of Pit-Grave Culture of Central Ukraine
Author - Syvopal, Mykhaylo, Chernysh Archaeological Museum, Chernysh, Ukraine (Presenting author)
Keywords: Corded Ware, Settlement System
Presentation Preference - Oral

Having excavated dozens of Pit-Grave burial mounds in Central Ukraine the author began the search for Pit-Grave settlement relics and as a result of a 20-year-long research has discovered more than 30 such objects, divided into two types: 1) basic long-term settlements; 2) temporary cattle herders’ sites.

The author has partially excavated one of these basic settlements (Desiatyny). It belongs to the most widespread type: 1) the settlements on small (0.5-1ha) islets (or peninsulas) in wide floodplains of the Dniester River and its tributaries. The Desiatyny type settlements have a relatively thin (0.4-0.7m) and a rich archaeological layer (up to 100 finds per 1m²).

Small (0.1-0.3ha) and poor in relics (<10 finds per 1m²), temporary sites have been found in 2) floodplain islets/peninsulas (often near basic settlements) and under the conditions of high topography: 2b) at the tops of watersheds but next to a water source; 2c) on the high bank terrace of small rivers of the 2nd and 3rd order; 2d) on the low promontories of small rivers. The last subtype is more known in a number of other territorial variants of Pit-Grave culture, though the watershed subtype is a new one.

The data deriving from the study of these settlement relics suggests that the Pit-Grave population of the Middle Dnieper Area practised transhumance, insignificantly complementing their diet with the help of fishing, hunting and food gathering. The vast majority of the population lived in basic settlements, located on the floodplain islets in collectives of 50 to 100 persons (in local large patriarchal families), which could unite into a clan together with the inhabitants of nearby settlements. During a warm period, the fully mature men departed with the herds to the temporary sites (some 5-10 persons per site) within the radius of several kilometres, while women, children and old people remained in the basic settlements.

No analogies of the large potestarian settlements, such as famous Low Dniester Mikhaylivka, have been discovered so far. However, the ruined Pit-Grave object 3) on the promontory of the high (20m) and steep bank of the Dniester River in the town of Kaniv could represent the remnants of a local potestarian centre.
smaller innovations or gradual local changes played the main role in the cultural transformation of a very wide region (Bankoff & Winter 1999, 175). However after 3000 BC a new type of sites and artifacts appeared in the Baltic Region. On the basis of these radical changes in material culture one can claim that almost all aspects of human life, social, ideological and economic has changed radically. After a recent studies of ancient DNA (Allentoft et al. 2015; Haak et al. 2015) a new important data were added to old debates of linguistics and archaeology.

The aim of the paper is to compare archaeological data of Corded Ware and post Corded Ware people from the East Baltic Region to the data of Pontic-Caspian steppes, and to try to find traces of cultural influences. A new DNA discoveries will be used as well.

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**TH5-17 Abstract 10**

Visitors from the Steppes. The Scandinavian perspective

*Author - Prof. Randborg, Klaas, University of Copenhagen, Copenhagen, Denmark (Presenting author)*  
*Co-author(s) - Kroonen, Guus, University of Copenhagen, Copenhagen, Denmark*  
*Keywords: Neolithic, Scandinavia, Steppe contacts*  
*Presentation Preference - Oral*

The archaeological interest in the Steppes has deep roots, including hypotheses about an eastern origin of the Corded Ware Culture, supposed migrations of the same, and even the introduction of the Indo-European languages, as suggested by G. Childe in the 1920s and later on elaborated by M. Gimbulus (Gimbutas, among many others). Recent ancient human genome studies (DNA) have added new dimensions to the old debate.

By suggesting that the Indo-European languages in Europe were introduced from the East, by 2500 BC, a number of concomitant issues need to be considered concerning cultural origins and processes. A particular problem is the rise of Indo-European languages in Western and Northern Europe, as well as the status of the Indo-European languages in the Mediterranean.

C. Renfrew’s viewpoint of the 1980s was that the first Indo-European languages arrived with and developed in Europe among the first people carrying out Neolithic farming and rearing of domesticated animals (Renfrew 1987). This idea has a ring of simplicity about it when correlated with the basics of archaeology: Neolithic expansion from the Near East and Anatolia to southeast Europe extended to Central Europe and later on to the North, with a parallel Neolithic expansion from Anatolia to the Mediterranean and on to Western Europe.

The paper examines the archaeological elements of possible Steppe origins in Scandinavian Neolithic and how these correlate with the aDNA findings.

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**TH5-17 Abstract 11**

The introduction of Indo-European in the later South Scandinavian Neolithic

*Author - PhD Iversen, Rune, University of Copenhagen, Copenhagen, Denmark (Presenting author)*  
*Co-author(s) - Olander, Thomas, University of Copenhagen, Copenhagen, Denmark (Presenting author)*  
*Keywords: Corded Ware, Indo-European, Proto-Neolithic*  
*Presentation Preference - Oral*

With the exception of Basque, Finnish, Estonian, and Hungarian, the modern linguistic landscape of Europe is almost entirely shaped by a single language family: Indo-European. This perhaps surprising linguistic unity is likely the result of a prehistoric cultural expansion or migration, as proposed by the Indo-European languages, which are the main factor in the spread of the Indo-European languages; this hypothesis, however, finds very little support among historical linguists. A competing view, the “steppe hypothesis,” puts the homeland in the Pontic-Caspian steppes around 4000 BC; this is the scenario preferred by many historical linguists, and also by a few prominent archaeologists. While accounting for the linguistic evidence, the steppe hypothesis has been criticised for not providing a plausible mechanism for the spread of the Indo-European languages here. The Anatolian hypothesis has an advantage as it correlates it with the spread of agriculture.

Research in ancient genetics has now shown that there was indeed an indisputable migration from the steppes within a timeframe that matches that of the steppe hypothesis. The new results have a potential impact on the discussion of the Indo-European homeland problem and may eventually bridge the gap between archaeology and historical linguistics.

This paper shall reevaluate the linguistic evidence on the time and location of the Indo-European expansion, focusing on the archaeological questions that have frequently given rise to misunderstandings between historical linguists and archaeologists.

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**TH5-17 Abstract 12**

Linguistics and archaeology: A reassessment of the Indo-European homeland problem

*Author - Dr. Olander, Thomas, University of Copenhagen, Copenhagen, Denmark (Presenting author)*  
*Keywords: Indo-European homeland, Indo-European languages, Linguistics*  
*Presentation Preference - Oral*

When searching for the co-called Indo-European homeland – the place from which the Indo-European languages spread – we should consider that some parts of the Indo-European languages arrived at quite different times, originating from different areas.

Popular among archaeologists is the “Anatolian hypothesis”, which locates the Indo-European homeland in Anatolia around 6500 BC and sees agriculture as the main factor in the spread of the Indo-European languages; this hypothesis, however, finds very little support among historical linguists. A competing view, the “steppe hypothesis”, puts the homeland in the Pontic-Caspian steppes around 4000 BC; this is the scenario preferred by many historical linguists, and also by a few prominent archaeologists.

While accounting for the linguistic evidence, the steppe hypothesis has been criticised for not providing a plausible mechanism for the spread of the Indo-European languages. The Anatolian hypothesis has an advantage as it correlates it with the spread of agriculture.

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This paper shall reassess the linguistic evidence on the time and location of the Indo-European expansion, focusing on the archaeological questions that have frequently given rise to misunderstandings between historical linguists and archaeologists.
DNA Analysis of Late Bronze Age Funerary Context from Eastern Romania

Author - Professor Bolohan, Neculai, Alexandru Ioan Cuza University of Iasi, Iasi, Romania (Presenting author)
Co-author(s) - Ciorpac, Mitic, Alexandru Ioan Cuza University of Iasi, Iasi, Romania
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Keywords: aDNA, Eastern Romania, Late Bronze Age
Presentation Preference - Poster

The aim of this study is to analyze the ancient DNA and to identify the haplogroup, presenting also the first results obtained on samples extracted from a Late Bronze Age funerary context discovered in Eastern Romania and to identify an efficient and reliable protocol for aDNA extraction. To test whether the protocol is efficient and capable of yielding good quality DNA, extraction was first performed by using the phenol:chloroform protocol and DNA IQ protocols. The funerary context from Tarnia, Bacau county, was discovered in 1972 and consists in a pit in which was discovered a human skeleton in a left supine position. The left hand was flexed and sustain the skull while the right hand was flexed and slightly lodged on the pelvis and the legs were strongly bent on the left side. The osteological remains were in a poor state of preservation. The burial contains two vessels as grave goods which were attributed based on their typological characteristics to the Noua culture (Late Bronze Age).

The sequences were subjected to Nucleotide BLAST (Basic Local Alignment Search Tool, Altschul et al., 1990) to identify the similarities with the previous sequences from data base and haplogroup assignation. The T72 sample shown an identity of 97% with HV1 sequences from a previous study conducted by Lippold et al., 2014. According to Eupedia database, Haplogroup T is composed of two main branches T1 and T2 and the both of them have very different distributions, which are diametrically opposed in most regions. Furthermore, the T72 sequence was aligned with haplogroup T sequences from NCBI and used to construct a ML tree, in order to identify the haplogroup assignation.

Circadian rhythms, moods, and Neanderthals: testing a biological explanation for behaviour

Author - Pazan, Kyra, Ann Arbor, United States of America (Presenting author)

Keywords: energetics, genetics, Neanderthals

Presentation Preference - Poster

Many archaeological studies of Neanderthal mobility and behavioural complexity have begun to draw on biological explanations for behavioural differences from Homo sapiens. If Neanderthals demanded higher energetic requirements than H. sapiens, then it follows that behaviours enabling Neanderthals to maximize energy intake would be selected for. Circadian rhythms and moods are closely linked to energy intake. This study investigates the phylogeographic distribution of alleles linked to regulation of circadian rhythms and moods in twenty-one modern European, Asian, and African populations in order to test the hypothesis that these alleles originated in Neanderthal populations in Upper Pleistocene Europe. It is hypothesized that presence of two alleles, rs10994336 and rs1006737, may have conferred an adaptive advantage on populations living in northern temperate zones during the Pleistocene. The presence of these alleles is linked to both manic and depressive mood states, enabling increased productivity in the summer and conservation of energy during the winter. If these alleles arose in Neanderthal populations, they would be present in higher frequencies in African populations. It was discovered that latter susceptibility allele is present in higher frequencies in African populations and the former is present in higher frequencies in Eurasian populations. This suggests that these alleles were not selected for solely in Neanderthal populations. The results of this study are significant because they caution against solely biological explanations for differences in the archaeological record.
TH6 SCIENCE AND MULTIDISCIPLINARITY IN ARCHAEOLOGY

Archaeology is a discipline without chronological, methodological, political or territorial borders. Yet current territorial divisions and traditional and local ideologies often bind and constrain the discipline in its study of the wider social processes of the past, thereby limiting the development of important, if broad, narratives. There are practical issues also. Lack of sufficiently detailed archaeological datasets, or the inadequate synthesis and integration of the data sets generated by multiple sources hampers interpretation. It presents additional challenges for researchers that seek to build broad regional or, indeed, global narratives. This theme invites contributions that deal with a wide range of phenomena on a regional or global scale, such as technological diffusion, cultural interaction, distribution and spread of plant and animal species, cultural identity, human and cultural mobility and social complexity. In particular, contributions that identify and examine wider social processes through the prism of local datasets are welcomed.

TH6-01 TIES THAT BIND. RELATIONSHIPS BETWEEN THE MOVEMENT OF RAW MATERIALS AND THE MOVEMENT OF ARTISANAL KNOWLEDGE ACROSS EUROPE 2000-1500 BC

Saturday, 3 September 2016, 14:00-18:30
Faculty of History, Room 214h
Author - Olausson, Deborah, Lund University, Lund, Sweden (Presenting author)
Co-author(s) - Andersen Brand, EVA, The Danish National Research Foundation’s Centre for Textile Research, Copenhagen, Denmark
Co-author(s) - Culler, Joanne, McDonald Institute for Archaeological Research, University of Cambridge, Cambridge, United Kingdom
Keywords: artisanal knowledge, raw material, skeuomorphism
Presentation Preference - Regular session

Recent developments in proveniencing methods, in particular analyses of stable isotope, have provided new insights into the movement of materials such as copper ore, wool, and amber on the European continent during the dynamic 21st - 16th centuries BC. Today we are able to demonstrate that materials moved from A to B, but the maps fraught with arrows tell us little about what happens in the receiving context. In this session we would like to explore the implications of raw material movement from the perspective of the local artisans. How does the introduction of a new and previously unknown raw material, or objects made from that raw material, affect local artisans, who in many cases lack knowledge about how to manipulate it? One response visible in the archaeological record is skeuomorphism, where local artisans, lacking adequate access to the new material, imitate foreign forms in locally available raw material. This is often interpreted as an attempt to block the influx of new materials seen as a threat by local artisans. Another possible response for the local artisan is to gain the necessary knowledge in order to be able to manipulate the new material him/herself. A third possibility is that the new raw material is accompanied by artisans who are already familiar with its properties.

As raw material movement affects the whole continent, we hope to attract scholars from north to south and from east to west. We would like to gather concrete examples of the three possible responses we outline above, but welcome other possibilities as well.
TH6-01 Abstract 02
What moved? Amber in Mycenaean World

Author: Prof. Czebreszuk, Janusz, Adam Mickiewicz University, Rokietnica, Poland (Presenting author)

Keywords: amber, manufacturing, Mycenaean culture

Presentation Preference: Oral

Among the findings of the Mycenaean culture archaeologist record several thousand objects made of amber. Raw materials for their production (sucinite) in the vast majority came from Northern Europe. Issues that still provoke a lively discussion among researchers are the reasons of this phenomenon and its dynamics. An equally important matter is the perception of amber as a raw material and items made from it in the Mycenaean World. In this regard, it is difficult to talk about the "processing/manufacturing of amber" in the Mycenaean culture. We should rather talk about the "usage of amber". It seems that this raw material is very easy to work with. Therefore, we should be able to find a specific types of amber products as well as its production residues characteristic for the Mycenaean culture. Despite many decades of research on the history of amber in the Mycenaean culture, dating back to the time of H. Schliemann and his excavations in Mycenae, none of this has been found. In the proposed paper I will address the reasons for this surprising state of research.

TH6-01 Abstract 03
The Settlement Agglomeration in Mikulovice, Eastern Bohemia

Author: Dr. Ernée, Michal, Institute of archaeology, Prague, Prague, Czech Republic (Presenting author)

Co-author(s): Langová, Michaela, Institute of archaeology, Prague, Prague, Czech Republic

Presentation Preference: Oral

The issue regarding the interregional and long-distance connections, networks, exchange, trade and mobility of people and objects in the Bronze Age has been intensively discussed throughout Europe. The newly excavated Early Bronze Age inhumation cemetery with approximately 100 graves in Mikulovice (eastern Bohemia) at which 30 % of the graves contain imported "exotics" and highly valued commodities such as Baltic amber in hundreds of pieces, sea shells, gold, bronze, is positioned directly on the important long-distance route, the so-called "Amber Road". Extraordinary in the context of the EBA period is a single female grave, which contained more than 420 amber beads, seashells and gold and bronze jewelry.

In addition to a complex analysis of the cemetery, a hypothesis should be verified, that the analyses of skeletons and artefacts from the cemetery situated on the "Amber Road" should reflect the anticipated greater mobility, long-distance contacts and a higher living standard of the members of the local population. Without doubt, this site offers an opportunity for a comprehensive study of the significant settlement agglomeration along a prominent long-distance route and gives us chance to join actively the highly current discussion.

TH6-01 Abstract 04
Local Responses to a Regional Aesthetic. Production of Encrusted Ceramics in the Carpathian Basin

Author: Prof. Sósker, Joanna, University of Southampton, Southampton, United Kingdom (Presenting author)

Keywords: Bronze Age, Encrusted Ceramics, White Inlay

Presentation Preference: Oral

Encrusted ceramics are a visually striking group of objects characterized by the use of white inlay. They are found in the material repertoire of several prehistoric groups throughout Europe but are particularly prevalent in the Carpathian Basin where they form an important, long-standing tradition that transcends individual cultural units. However, although encrusted ceramics ostensibly look similar, our recent analyses have revealed significant variation in the production of inlays. They have also demonstrated local production at sites where encrusted ceramics have hitherto been considered imports. This paper considers the implications of this variation in terms of small-scale responses to a wider regional aesthetic - how to make the colour white - in a range of Bronze Age cultural groups in the Carpathian Basin.

TH6-01 Abstract 05
Transmission and transition, relationships between craft-knowledge and textiles across Europe

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Co-author(s): Mannering, Ulla, Nationalmuseum of Denmark, Copenhagen, Denmark

Keywords: Europe, Textiles, Transmission

Presentation Preference: Oral

Recent research has clearly demonstrated that the movement of textiles and specific textile raw materials in northern Europe is more complex than hitherto known. Analyses have indicated that some wool in Scandinavian Bronze Age textiles is not local, coming from outside present day Denmark (e.g. Fri et al. 2015). It is likely that already in this period wool was being exchanged in Northern Europe, and trade in textiles and wool is well known in the Eastern Mediterranean in much earlier periods (e.g. Michel and Nosch 2017). However, the demand for a new raw material only arises to meet a need and desire in society. Use of a new textile raw material would, furthermore, require new artisanal knowledge. In this paper we will, from a conceptual perspective, discuss the implications of this with regard to textile fibres and cloth cultures in European societies.

TH6-01 Abstract 06
What's new? The first bronzesmiths in southern Scandinavia

Author: Prof. Olausson, Deborah, Department of Archaeology and Ancient History, Lund, Sweden (Presenting author)

Keywords: artisanal tradition, bronze casting, Late Neolithic

Presentation Preference: Oral

The study of technological innovation is often abstract, tending to concentrate on large scale changes in material culture. However, non-industrial material culture consists of objects which were crafted by individual artisans who worked within an artisanal tradition. According to Helge Vandkilde, bronze casting technology was introduced to Denmark during the early Late Neolithic. Whereas flintknapping had been an integral part of the technological knowledge here since humans first migrated to the Scandinavian peninsula, bronze casting know-how has no apparent domestic predecessors; it is a novel technology for which local artisanal traditions were lacking. In this paper I propose to use the artisans' perspective to explore how the metal-casting tradition took hold and spread in southern Scandinavia.

TH6-01 Abstract 07
Understanding Bronze Age Life - from an Artisanal Perspective

Author: PhD student Botved, Katajina, Lund University, Lund, Sweden (Presenting author)

Keywords: artisanal perspective, tacit knowledge, expertise, ceramics, art material, artisanship, skill, moving craft knowledge

Presentation Preference: Oral

There are traces of communication in ancient artefacts and craft materials. Often archaeologists are interpreting this as results from trading or import. The question for this paper is to explore and understand how the ancient artisan reacted and used new ways of working and new ways of thinking in connection to "moving artisans and crafts knowledge". Pryssgården area in the South East of Sweden bear traces of distant artisanal communications and could be described as a node for new expressions and techniques in the Late Bronze Age.

The question of craftsperson and their role in prehistory has been discussed in many different ways and from different theoretical perspectives. In my thesis The Artisanal perspective-an archaeology in practice (2016) I have described how artisanship can be the reason for moving material and or techniques around large geographical distances. Learning and sharing knowledge develops new links between people. These circumstances might be the departure for ancient artisans to leave the known area and try new paths.

I use and widen artisanal knowledge to interpret artefacts based on my own tacit knowledge as an educated professional ceramicist and archaeologist. In other crafts I collaborate with skilled artisans as expertise to extract valuable knowledge that gives a good base for archaeological synthesis concerning crafting issues.
The interplay between technology and geography in the development of trade networks

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Keywords: geography, networks, technology
Presentation Preference - Oral

The archaeological record shows that artefacts have been exchanged over huge distances at times in the distant past when such exchange must have been very difficult. In this paper we attempt to describe how these established and intermittent interactions can evolve into established trade networks.

Trade implies organised exchange in sufficient volume to provide a definable pattern. Most simply, the ability to conduct trade encodes two very different ‘distance’ scales: the ‘distances’ that traders need to traverse in order for the network to be robust (e.g. well-connected) and the ‘distances’ for which the available technologies permit the ready transportation of goods.

As time passes, improving technologies lead to a growth in technological distance. The establishment of ‘trading’ networks is conditioned by its ownership. We see evidence of an early separation as a reflection of the ‘ease’ of exchange between sites and that the application of ‘technology’ (e.g. the wheel, pack-animals, sail) is conditioned by its ownership.

As shorthand, we term the former ‘geographic’ distance and the latter ‘technological’ distance. There is a symbiosis between the two; the technological improvements that make travel more reliable and viable encourage network growth, conditioned by geography, which exploits this ability to travel longer distances. We stress that by ‘geography’ we mean not so much Cartesian space but the ability to travel longer distances. As time passes, improving technologies lead to a growth in technological distance. The establishment of ‘trading’ networks is necessarily constrained when technological distance is relatively large. At the other extreme, trading networks have become well established by the time that technological distance is relatively small. The tipping point between struggling and established networks arises when the distances are comparable. Technology then permits exchange over just those distances necessary for robust networks to exist and a vigorous growth in exchange occurs.

To exemplify these ideas we examine the evolution of maritime networks in the Aegean and E. Mediterranean from the Early to Late Bronze Age. The tipping point for the rapid growth of trade and exchange occurs at the transition from Middle to Late Bronze Age with the large-scale adoption of sail. This becomes clear when Minoan maritime networks are modelled in a way in which this sensitivity to ‘geographical’ distance is explicit. However, on either side of this transition point sensitivity to distance is less important and different computational approaches are required. The implication is that network dynamics in Early, Middle and Late periods has to be understood in terms of different social agency for network formation.

An earlier formulation of these ideas can be found in our paper, published in ‘Maritime Networks; Spatial structures and time dynamics’, C. Ducruet (Editor), Routledge Studies in Transport Analysis, Routledge (London and New York), 2016.

Copper ore: the path from the Tien Shan to the South Urals in the Late Bronze Age

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Keywords: bronze production, Late Bronze Age, West-Asian metallurgical province
Presentation Preference - Poster

Widespread of bronzes production in the Bashkir Urals is connected with the Late Bronze Age. The study of settlements and funerary monuments of the Late Bronze Age in this area gave massive material on bronze production in the region (waste products, casting moulds, copper drops and ingots, particles of copper ore, containers with traces of waste products) and also numerous products made of bronze (knives, chisels, awls, holdfasts for vessels, sickles, ornaments and so on). E. Chernykh distinguished in this area a West-Asian metallurgical province connected with the Eurasian Steppes. This is connected with a contact between the two groups of population in the southern Urals: Srubnaya and Andronovskaya (Alakulskaya) cultures. In Bashkir Urals, in the area between the rivers Dema and Urshak, Kazburunovsky archaeological micro-district belonging to the late Bronze Age is distinguished. There is a group of 5 settlements and 4 barrow burial here. In the process of investigation the complex of sites consisting of five simultaneous settlements - Usmanovo I, II, III settlements, Muradymovo I, VII, VIII settlements and 57 Kazburun barrows was examined. Radiocarbon dating (Beta Analytic: 1990 – 1750 BC) proved chronological unity of these barrows and settlements. Numerous traces of bronze production were also found on the territory of Kazburun district. In Bashkir Urals, close to Kargaly mines, there are 770 mines for the extraction of copper sandstones. V. Lunkov (Laboratory of Naturally Scientific Methods, Institute of Archaeology, RAS, Moscow) and M. Radivojević (Jesus College Research Fellow McDonald Institute for Archaeological Research) carried out a complex of analyses of all bronze material belonging to one of the large settlements – Muradymovo settlement (Kazburun archeological district). Metal was worked on this site – refining, melting, casting. The primary (Cu) alloy could have been imported from other regions as ‘raw’ ingots (bars) artefacts. The provenance analysis imply that the metal worked in the site of Muradymovo settlement was likely acquired from the ores exploited in the Tien Shan mountains. The UCL and RAS analyses show that there is a significant number of pure copper artefacts that represent stock, ingots, working debris. The pure copper artefacts as implements (knives, etc.) need a closer look typologically etc. (RAN analyses). The tin bronzes are already present as finished artefacts and there is no evidence for their production thus far in this site. Due to the research, a new interesting problem in Bashkir Urals archeology came up. Having a large number of copper sandstones and mines, developed in the Late Bronze Age (Kargalskaya mines), we got an interesting result: the export of ore from northern Tien Shan. As a result, deposits of copper sandstone of Upper Permian red color formations in Southern Urals from Kargaly mines to Eak River in the area of 16378 square km were examined. Paleo-genetic studies have identified several groups in Kazburun archaeological micro-district. Probably in the late Bronze Age the ore came with population of Andronosivkaya (Alakulskaya) culture of South-Eastern Kazakhstan. This confirms the theory of E. Chernykh about the unity of West-Asian Metallurgical Province.
TH6-03 Abstract 01

Early farming and the transmission of ceramic traditions in the western Balkans

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Co-author(s) - Vander Linden, Marc, University College London, London, United Kingdom
Keywords: Balkans, ceramic, transmission

The ERC EUFARM project focuses on the processes of cultural transmission associated with the spread of farming across Europe. This is investigated through comparisons, within and between both streams of neolithification, of four technological innovations: farming practices, landscape use, pottery, and lithics.

Farming practices diffused across Europe following two main routes, inland and maritime. The inland stream initially corresponded to the Starčevo-Körös-Criș complex across the Balkans from 5600 cal. BC onwards, and then expanded across continental Europe as the Linearbandkeramik culture. The maritime stream is associated with the Impresso-complex in the Adriatic and Tyrrhenian seas, and the French Mediterranean coast, and then with the Cardial culture across the western Mediterranean Basin.

The EUFARM research area is the western Balkans where the two streams are discernible and the only one where they are present in such close geographical proximity. The project is focused on two aspects. Both inland and maritime streams involved an initial phase in their respective core areas. Did both streams follow similar trajectories? These secondary phases of farming expansion seem to correspond to the meeting and mixing of both inland and maritime streams. How can we account for this in terms of cultural transmission?

Differences between the streams are marked in pottery traditions. Cultural transmission is the process by which information is passed from individual to individual through social learning. It is well recognised to be the mechanism by excellence underlying cultural change. It raises the question of the signal of cultural transmission in the archaeological record.

The ceramic chânes opératoires, defined as a series of operations which transforms raw material into finished products, is a particular relevant signal for tracing and identifying histories of transmission. Explanations have been found in the learning process. It has been demonstrated that learning involves a tutor and a model. At the end of the learning process, the learned skills are literally embodied. At the collective level transmission occurs within groups made up of individuals linked by social ties. These ties determine the social perimeter into which ways of doing are transmitted. As a result of these learning processes it appears that:

- the chânes opératoires are by excellence inherited ways of doing transmitted through successive generations;
- changes within chânes opératoires express cultures' histories and the factors affecting them. In the latter case, evolution of technological behaviours can be generated through endogenous processes (or phylogeny) resulting in innovation(s), or through exogenous processes (or ethno genesis), taking place beyond social boundaries through horizontal transmission(s).

In this paper, we will present the first results based on the ceramic chânes opératoires analysis from the western Balkans.

TH6-03 Abstract 02

The Neolithic Volga-Kama pottery as a source of reconstructions of cultural interactions

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The research presented here focuses on the following issues: 1) identification of areas in the Middle Povolzhye and Prikamye with early potteries, 2) establishing chronological frameworks using radiocarbon dating of pottery, 3) definition of the relations between the Neolithic cultural groups of Volga-Kama.

The methods used to achieve these objectives are: 1) morphological grouping of pottery based on the ornamentation technique, 2) radiocarbon dating, and 3) technological analysis of pottery (Bobrinsky, 1999).

The study of the ancient Volga-Kama pottery revealed areas with two types of pottery raw materials: silty clay rich in sand in the Middle Povolzhye and plastic clay tempered with charcoal in the Prikamye region (Vybornov, Vasilyeva, 2013). Flat-bottomed pricked pottery is present in the Middle Povolzhye in the early Neolithic period (5500 cal BC). It is all made of silty clay when still plastic.

The proportion of local pricked pottery made of clay and charcoal increases to 15%. Kama comb-ornamented pottery made of clay tempered with charcoal does not exceed 10% further to the west (Maryiskoye Povolzhye, Primbukhany, and Posyurye). The rest of the ceramics were made of silty clays. This recipe (clay and silt?) is typical for the pricked pottery from the forest-steppe of the Middle Povolzhye.

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The Nabó and Zóker are two nearby rivers in the Alto Ribatejo region, in the hinterland of Central Portugal. The Nabó is a tributary to the west of the Zóker, and not far from their meeting point where they enter into the Tagus River. Despite their proximity, they are crossing geologically different landscapes while the Nabó is cutting through limestone hills, the Zóker passes through the acidic terrain of the Central Iberian Massif and ends up in the fluvial terraces of the Tagus. This diversity has been reflected in the archaeological studies of the region. The caves around Nabó are considered as the eastern most representatives of the Neolithic group of Estremadura, a group whose roots are in the Cordial pottery tradition. On the other hand, the open-air sites and megalithic monuments in the Zóker valley are associated with the archaeological amalgam of Alentejo and the Iberian interior, marked by the Bolique palm pottery style during the Early Neolithic.

This work is reviewing the ceramic collections from two sites, one from each of the regions: Gruta do Cadaval from Nabó and Anta 1 de Val da Laje from Zóker. The first is a burial cave, dated at the transition from early to middle Neolithic, and the later is a Chalcolithic dolmen, suspected of being built over more ancient remains. Through pottery characterisation, an attempt is made to answer several questions concerning stratigraphy and intra-site variability, but also regional communications and mutual influences. In addition, organic residue analysis offers a functional and social dimension to the role of pottery in the activities taking place in these two sites.

TH6-03 Abstract 04
Mixed assemblages and social relations in the Neolithic transitional period of the Central Balkans
Author - Dr. Vulović, Jana, Faculty of Philosophy, Belgrade, Serbia (Presenting author)
Keywords: pottery, Starčevo, Vinča, technological tradition, hybrids
Presentation Preference - Oral

The transitional period from the Early to the Late Neolithic of the Central Balkans is characterized by the presence of mixed ceramic assemblages on several archaeological sites. Mixed assemblages (not only pottery, but also so-called cult objects - altars and figurines), consist of the specimens typical both to the Starčevo and Vinča technological traditions. However, another very important features occur in these assemblages: hybrids and the presence of carefully, roughly finished products. The paper focuses on social aspects of these phenomena: do they suggest mixing of people with different group identities? Do they suggest that there were changes in the relations between the teachers and apprentices in the craft? Does the variability of ornamentation techniques and design motifs imply lack of social pressure in learning frameworks? And finally, do the roughly finished products suggest the presence of inexperienced artisans or newcomers unfamiliar to local traditions?

TH6-03 Abstract 05
Transforming traditions behind the gloom: 6th millennium BC pottery styles of Transdanubia
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Keywords: 6th millennium BC, pottery styles, Transdanubia
Presentation Preference - Oral

Southern Transdanubia in western Hungary is a region that served as a transitory area between the Balkans and Central Europe during the 6th millennium BC. Current scientific analyses of the research team focus on four broadly contemporaneous sites in three different microregions. Balatonszárzál-Kis-erdély-dűlő lies on the southern shore of Lake Balaton, while Tolnai-Mőz is located at a distance of 80 km to the southeast closed to the right bank of the Danube. Szederkény-Kukorica-dűlő and Versend-Gőlnics has been discovered 50 km further to the south, located only a few km from each other. The evidence of original buildings are similar, they represent the timber-framed architecture of the Linearbandkeramik culture. The ceramic materials, however, show considerable differences.

The pottery from Balatonszárzál can be described as an assemblage that reflects the formerly recorded Transdanubian LBK characteristics. There are many more detectable Starčevo and Vinča traits along LBK element present at Tolnai-Mőz and Versend-Gőlnics. In contrast, the vast majority of the pottery material from Szederkény can be hardly distinguished from the early Vinča ceramic style, but Flánd/Sília style pottery – probably the earliest manifestation of the Sopot culture – is also present in a separate part of the settlement.

TH6-03 Abstract 06
Cultural and technical identities through Middle Neolithic paste recipes in the Paris Basin
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Keywords: ceramics, Neolithic, petrology
Presentation Preference - Oral

For a few years, archaeological investigations on temper and ceramic raw materials procurement and processing have been developed for the Middle Neolithic (4600-3800 B.C.), showing a certain diversity in the north of France. My PhD work aims at developing this research dynamic by studying 15 middle Neolithic sites, most of them are located in the Paris Basin. The mid-fifth millennium BC in the Paris Basin is a period of major sociological changes. The demographic trends are punctuated by a demographic population increase. The social landscapes are reorganised through large enclosures. Territories are organised through the control of landscapes. Temporal and spatial differences are also observed. The ceramic analysis offers a functional and social dimension to the role of pottery in the activities taking place in these two sites. Monumental tombs can also be observed in the funerary practices. This demographic dynamism gave an enhancement to agricultural practices as well as cultural diversity. Indeed, several cultural groups developed for a millennium. Roessen and Cerny cultures are identified for the beginning of this period followed by Chasséen, Michelberg, Groupe de Noyen and Groupe de Spière cultures.

The use of organic and inorganic materials to date middle Neolithic in Roessen and Cerny cultures has long been confined by a man use of grog and tempers that can be seen later in time. However, current researches consoliated by petrographic analyses show a more complex picture. Major diversities in paste recipes can also be observed according to sites and their locations. Those preliminary results might question some criteria used to define the various Middle Neolithic cultural groups in the Paris Basin. Further investigations will mainly focus on tools and techniques involved in ceramic raw materials processing.

TH6-03 Abstract 07
Fuzzy Boundaries, Permeable Borders: challenges in the interpretation of ceramic assemblages
Author - Silva, Teresa, Democritus University of Thrace, Thessaloniki, Greece (Presenting author)
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Keywords: Late Neolithic Greece
Presentation Preference - Oral

It is tempting to treat borders as fixed, lines drawn on a map, but to do so fails to take into account borders that are permeable. They may be crossed by people, ideas, and objects in a variety of ways as part of an ever changing social landscape. In order to interpret and respect this dynamic force for the lives of people, our ways of perceiving these borders must alter. However, we study ceramic assemblages, a proxy for the expression of these changes, as a generalised picture of these changes, compressing, in most cases, several generations of people and vessels into single phases. This arises the issues of mixed assemblages. There are many reasons why an assemblage might end up being perceived as mixed. Our approaches are developed by a detailed ceramic study in the northern Greek Late Neolithic (a time of social change at ca. 5400-4400 BC), concepts of interaction, and ethnoarchaeology.
Do ut des: pottery “imports” and imitations in Romanian Neo-Eneolithic

Author - Stefan, Cristian Eduard, “Vasile Parvan” Institute of Archaeology, Bucharest, Romania (Presenting author)

Keywords - Neo-Eneolithic, pottery, Romania

Presentation Preference - Oral

Amongst all finds recovered from the archaeological record, pottery is one of the most common types. Since the beginning of professional archaeology, pottery was used to establish exchange relationships between social groups from different areas and/or to construct relative chronologies. In this presentation we try to review so-called “imports” and imitations found in archaeological record in the Romanian Neo-Eneolithic and discuss their meaning. With the help of ethnoarchaeological record we can assume the significance of “foreign” pottery in areas with different traditions as a product of exchange, exogamy or imitation. The separation between “imports” and imitations is usually very hard to identify with the naked eye, in this case archaeometry could be a useful tool to answer the questions.

Hybrid Societies: the vagueness of Neolithic “cultures” in the Balkans

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

Keywords - Balkans, house models, pottery

Presentation Preference - Oral

The determination of culture was a reference for the culture-historical archaeology in the Balkans and abroad, and leads many to identify particular regions with finds unearthed from Neolithic sites. This was a helpful tool for the early stage of prehistoric archaeology and contributed to the understanding of particular regional attributes common to the societies that inhabited various areas in the Balkans. However, recent research indicates that these cultural borders and material features are not so rigid and often much more extensive than the proposed geographical frames. The concept of culture itself is questioned and often reconsidered with the issue of identity, as more evidence is available concerning the Neolithic societies, their villages, pottery, tools, images, burials and human remains.

Since the first definition of Neolithic, cultures some regions were regarded as separated and isolated areas and mainly considered within modern political borders. This was a significant step towards the first definition of cultural features of these regions and as such contributed in the identification of sites into cultural groups. Hence, the reconsideration of published material, artifacts from museum stores, documentation and new excavations indicated that some geographically divided and different regions were barely ‘culturally’ diverse. Thus, pottery regarded as the main feature of one culture appears in another which was classified as belonging to a different cultural group.

The case-study of the Neolithic pottery in Pelagonia and its production within the agricultural communities of the Skopje valley, Lake Ohrid basin, Ovče Pole and Polog, will be presented. Late Neolithic Vinča pottery will also be considered, as some of the temper types and design features appear at earlier tell sites in Pelagonia. In addition, the anthropomorphic house models from this area will be discussed. Originally, these were attributed by archaeologists to different cultures due to their typological variations in these regions.

Therefore this paper will mainly consider pottery design and human representations in order to emphasise the common Neolithic features of the isolated regions and the modes of networks which integrated shared identities of distant societies. The issue of culture will also be discussed as it often invokes a contemporary notion of communities that inhabited particular geographical areas. Their intensive communication and common material culture goes beyond the archaeological cultural frameworks of the Balkans and as such will be emphasised for further revision.

Modelling interaction at the peripheries: LN/EC Levant and the Halaf/Ubaid interaction spheres

Author - Gabriela, Eva, Milano, Italy (Presenting author)

Keywords - communities of practice, interaction spheres, technological transfer

Presentation Preference - Oral

Several Late Neolithic and Early Chalcolithic Levantine assemblages (8th-6th millennium cal BC) contain pottery identified as Halaf and/or Ubaid. In most cases, these ceramics are not very similar stylistically or formally to the ‘classic’ Mesopotamian specimens, and the Levant is in fact considered to lie outside the area where Halaf and Ubaid ceramic traditions emerged. More interestingly, however, the Levant is located on the periphery of both Halaf and Ubaid horizons or interaction spheres. Here, like in other ‘peripheral’ regions, pottery is one of the few elements, if not the only, to be shared, and its higher variability, both in terms of decoration and forms, indicates the differential spread of traits over space and time. The traditional narratives mainly emphasise possible cultural or ethnic affiliations to northern Mesopotamia, but, in this paper, Levantine ‘mixed’ assemblages are rather conceived primarily as a peculiar expression of the vast Halaf and Ubaid supra-regional socio-material networks.

The uneven distribution and networking of traits assign the significance of the role played by local socio-economic conditions and cultural practices in their dissemination, even if available evidence rarely allows us to reconstruct the contexts of production and use of the Levantine Halaf- and Ubaid-related ceramics in detail. Local production, however, was deposited locally in most cases, and, since the manufacture of such pottery presupposes the use of specialised technologies, we need to look within the Levantine autochthonous traditions, its spread surely involved technological transfers. Interregional contacts, thus, appear to have structured potting activities within the Levantine communities, contributing to the establishment of extended communities of practice.

Focusing on pottery manufacturing, based on old and recent data, this paper seeks to better understand the interaction dynamics implicated in the diffusion of Halaf and Ubaid traits at the boundaries of their respective interaction spheres, in order to further explore the global character and meaning of Halaf and Ubaid phenomena.

The Comb-Nara interface in the E. Baltic: pottery form and function in the dynamic 4th mill. BC

Author - Dr. Bērziņš, Valdis, University of Latvia, Rīga, Latvia (Presenting author)

Keywords - eastern Baltic, hybridisation, pottery

Presentation Preference - Oral

In the 4th millennium cal. BC the eastern Baltic region experienced various striking developments that occurred more or less simultaneously and are likely to be inter-related. Thus, a wide exchange network emerged at this time, involving a coast-to-inland flow of Baltic amber, complemented by a transfer of lithic materials. At the same time, the indigenous tradition of red- and orange-tempered ceramics, representing what is known as the ‘Nara Culture’, encountered the starkly contrasting Comb Ceramic tradition of rock-tempered, densely ornamented pottery – evidently an intrusive phenomenon that arrived from neighbouring areas to the north. “Hybridisation” is a concept frequently employed to characterise the ceramic assemblages of this time, exhibiting mixed-temper techniques found across different parts of the world. The separation of these two traditions is usually based on the presence or absence of organic materials. However, this approach often fails to account for the variability of the local traditions and their interactions with the “foreign” pottery from the south. In the case of the Comb-Nara interface, the presence of mixed-temper ceramics raises questions about the degree of hybridisation and the extent to which local traditions were influenced by the “imports.”

The expansion of Tisza material culture from the core area of its development in the middle portion of River Tisza began in the 7th millennium cal. BC, providing a fascinating example of cultural expansion and exchange. The Tisza culture is characterized by distinctive ceramic styles, particularly the so-called “Tisza” and “Vinča” pottery forms. The study of these ceramics offers insights into the socio-cultural dynamics of the area, as well as the potential for technological transfer and the influence of external factors.

The ARIIE project explores the chronology of the Tisza culture and its interactions with other cultures, particularly those from the Levant and the Balkans. The project employs a multidisciplinary approach, combining archaeometry and ethnoarchaeological methods to understand the exchange processes that characterized the region. By examining the material culture, including ceramics, tools, and other artifacts, the project aims to reconstruct the regional and international connections that took place during this formative period.

The Levantine autochthonous traditions, its spread surely involved technological transfers. Interregional contacts, thus, appear to have structured potting activities within the Levantine communities, contributing to the establishment of extended communities of practice.
Very interestingly, the results of the previous archaeological research conducted on Idob revealed that materials characterised by both “Tisza” and “Vinča” styles could be found in the same contexts, for example in the house excavated in 1954 in Gradilje Idob. Therefore, Idob represents an ideal case study to investigate the dynamics which result in the formation of mixed assemblages in this region at that time.

In this presentation we provide the preliminary results of the pottery technological project which gathered experts from different fields of expertise: archaeology, pottery technology and archaeometry. Through different types of analyses (macroscopic technological examination, thin section petrography, portable X-ray fluorescence and FTIR analysis), we aimed to shed light on different aspects of pottery production at the site during the Late Neolithic, in order to understand if these different pottery styles could be connected to different chaînes opératoires and could reflect different organisations of productions. The aim is to interpret the existing mixed inventory and understand if these different styles are reflecting the co-habitation of different social groups on Idob, or if they are the expression of exchange of ideas and communication among communities characterised by different material culture.

TH6-03 Abstract 13
Mixed Vinča and Tisza assemblages of the Borjó-Plain, Vojvodina: Contextualisation and technology

Author - Dr. Hofmann, Robert, Kiel University, Kiel, Germany (Presenting author)
Co-author(s) - Spanari, Michela, Institute of Archaeology, UCL, United Kingdom
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Keywords: mixed assemblages, Neolithic Vojvodina, pottery analysis
Presentation Preference - Oral

During the Neolithic, due to their geographical position, Vojvodina and Banat formed a contact zone between several cultural zones of the East - West and North - South in the Carpathian - Dinaric System. This means that the whole region is a meeting ground for different settlement structures, architecture and material culture. In a group of sites in the Tisa valley, in the West of this area, Vinča and Tisza pottery styles occur together in the same settlements. We are studying this phenomenon at the spatial scale of two large late Neolithic settlements and a loess plain with a size of 11 km² which is situated close to the town of Novi Bečej.

To understand the socio-economic implications of this and similar phenomena, we are contextualising artefactual material, archaeobotanical and zooarchaeological remains through comparisons of inventories from different households and settlements. The co-occurrence of Vinča and Tisza pottery styles in the same households is being investigated by typological, chronological and technological analyses. Geochemical and mineralogical analyses contribute to answering the questions of how pottery production in these sites was organised and how this pottery was linked technologically to the core regions of the cultural groups involved.

TH6-03 Abstract 14
Technology of Neolithic-Eneolithic ceramics in the territory of Neva-Ladoga basin (NW Russia)

Author - Dr. Kulikova, Marianna, Herzen State University, St. Petersburg, Russian Federation (Presenting author)
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Keywords: Okhta 1, Podolje 1 sites, Neva-Ladoga basin, petrography, XRF, microtomography of ceramics, technology, Neolithic-Eneolithic pottery
Presentation Preference - Poster

There are unique Neolithic-Eneolithic sites in the territory of the Neva-Ladoga basin (NW Russia). The site of Okhta 1 is located at the mouth of the Okhta River in St. Petersburg city region. The first people occupied this territory around 4200 BC. These were the first communities of the Neolithic Pt-Comb culture. Changes in the landscape and the climatic conditions around 3200-3000 BC made this area again attractive for habitation. In this period, on the coastal zone the houses, fishing constructions, animal species of the Greatarian Plain, the Central Balkans and Tranсnyergy is manifested, among others, in settlement structure, architecture and material culture. In a group of sites in the Tisa valley, in the West of this area, Vinča and Tisza pottery styles occur together in the same settlements. We are studying this phenomenon at the spatial scale of two large late Neolithic settlements and a loess plain with a size of 11 km² which is situated close to the town of Novi Bečej.

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TH6-03 Abstract 15
Corded Ware Culture in the North-West of Russia: mix of traditions

Author - Tkach, Evgeniia, Institute for the History of Material Culture RAS, Saint Petersburg, Russian Federation (Presenting author)
Keywords: Corded Ware Cultures, migrations, traditions
Presentation Preference - Oral

There are a lot of settlements in the North-West Russia with Corded Ware Cultures (CWC) materials. They appear in the pile-dwelling settlements also. On the ceramic materials we could trace mix of different archaeological cultures: local and indigenous. First appearance of the CWC was observed in the middle of the III mil. BC on the pile-dwelling settlement Usvatskaya IV (Pskov region). I want to describe the settlement – layer a settlement Seryeya II. This is settlement on the mineral bank near the river. Ceramics introduce a different traditions: local, Usvatskaya, and indigenous, CWC. We could trace them in technology of making pottery (the way of using vessels, admixture in the molding dough), in pottery forms and in ornamentation. For example, admixture of gruss was never used in Usvatskaya culture, but on the vessels we did ornamentation this is a main additive. On the other hand, technique of “blade and anvil” was wide spread in Usvatskaya culture, but in the CWC materials on the settlement this technique was found only a few times. Cord ornamentation was never used in the North-West Russia until the end of Neolithic. This tradition came with CWC inhabitants in the end of III mil. BC. More interesting, that in couple vessels we see the mix of different traditions: ceramic was formed by using slabs, ornamentation represents a horizontal lines of 2-twisted cord and as admixture in the molding dough was used gruss. Possible, that newcomers (CWC inhabitants) were mixed with local inhabitants and we trace now some new architectural tradition, new archaeological culture.

TH6-03 Abstract 16
Making pottery on the Neolithic settlements in the north of the Sozh river basin (Eastern Belarus)

Author - Tkachova, Maryia, Institute of History NAS of Belarus, Minsk, Belarus (Presenting author)
Keywords: technology, Neolithic pottery, Upper Dniester culture
Presentation Preference - Poster

This study is based on the ceramic material from the main Neolithic sites of the in the north of the Belarusian Pasozhzha (Eastern Belarus). The study was divided by V. Tselevsky excavated here an area of 140 m². The presented poster discusses the results of the study of 1612 Neolithic potsherds from more than 100 vessels. The Rudina 1 settlement is situated on the first terrace of the left bank of the Sozh River (Eastern Bularus). The site was discovered by V. Kopytin in 1994. In 2007-2008 A. Kolosov excavated here an area of 300 m². The presented poster discusses the results of study of 2040 Neolithic potsherds from more than 100 vessels. The Starz Dziedzin 4 settlement is situated on the first terrace of the left bank of the Oster River. The site was discovered by A. Kolosov in 2006. In 2006, 2010 and 2012 A. Kolosov excavated here an area of 232 m². The results of the study of 1782 Neolithic potsherds from more than 80 vessels will be presented. Ceramic material includes following three main parameters: technology, morphology and decoration. This allows a division of the pottery into several groups, which should reflect peculiarities of cultural situation in the northern Belarusian Pasozhzha region during the Neolithic period. Group 1 is represented by slightly shaped vessels with slightly bent rim. Pottery of group 1 is the earliest on the settlements and is similar to pottery from the sites of Mahilo-Pahatochnoc (the Dnieper River basin). The clay body contains organic temper and comb impressions form dense or sparse horizontal, diagonal and vertical rows. Group 2 is represented by vessels with inverted upper part or with slightly bent rim. The vessels were tempered with organic and coarse-grained crushed stone. The dominant ornamental element is called “liskak". Ornamentation is dense - with closely spaced rows of prints. These types of ceramics are similar to those from the sites of the Dnjepr River basin. Group 3 is represented by vessels with shoulder, wide neck, narrow upper part and splayed rim. These vessels have complex zonal ornamentation; elements of decoration are varied. This group 3 represents the last phase of the Upper Dnieper culture. In addition the pottery features of the Pits-Comb Ware culture and the Middle Dnieper culture is also found at the site. The results of the analysis indicate the presence of several traditions in the pottery making on the Neolithic settlements in the north of the Sozh river basin. Location of these sites in the upstream of the Sozh River and their proximity to the area of Dsna River culture has played a key role in the formation of these traditions.
Investigations of the last decade significantly increased the resource base for the study of the Neolithic of Belarussian Pabuzka
(Belarussian part of the Bug River basin). During recent excavations Sub-Neolithic pottery was found at 19 sites in the region.

For the first time pottery of the Dubčiai type was discovered in the region. This fact gives the possibility of defining more
exactly the area of the Przyplis-Neman culture. Some finds attributed to the Sočkūliški pottery type were also found. The latter
type is most probably a result of a local development of the Dubčiai pottery in the western part of Przyplis-Neman culture area.

Neman culture is represented by pottery of Lysaja Hara and Dobry Bor types. The finds which belong to the former are not
numerous. It may be remotely connected to the main area of its distribution (upper reaches of the Neman River). The Dobry Bor
type pottery is much more frequent. It was found at most of the studied sites. It can be divided into two groups: the first one is
represented by hybrid pottery with features of both Lysajka Hara and Dobry Bor types. Analogies to such pottery can be found in
the Upper Przyplis River basin. The second group consists of “classic” Dobry Bor pottery.

The site Ljubičeva-Bukovlje in central Croatia has been systematically excavated since 2012. Primarily it was recognised as a Late
Antique site dating to the 5th and 6th centuries AD. During the archaeological excavations prehistoric layers from the Iron and
Copper Age were also found. Due to the erosion and later occupancy of the site, the oldest Copper Age layers were severely
disturbed. Hence, the affiliation of pottery finds is based on their ornamentation, shape and technology. Although most of the
finds could be ascribed to the Lasinja culture, there are some pieces that show traits of the Retz-Gajary culture. The appearance
of pottery belonging to these two cultures is known from several sites in Croatia, Slovenia and Austria. Sometimes they are found
together in the same layers and sometimes Lasinja culture pottery is found in layers beneath the ones with pottery ascribed to the
Retz-Gajary culture. New radiocarbon dated assemblages have brought some new insights regarding some of the ornamentation
that was previously connected to the late phase of Lasinja culture, supposedly influenced by Retz-Gajary culture. The question raised is whether we can suppose the presence of Retz-Gajary culture or its influence at the site Ljubičeva-
Bukovlje based on several ornaments that are usually ascribed to Retz-Gajary culture or are we dealing with Lasinja culture
pottery and these ornaments appear regardless of Retz-Gajary culture? Clay pastes of Lasinja culture pottery and pottery with
Retz-Gajary traits will also be analysed in order to see if there are some differences between them.

Neolithic pottery from Ljubic cave (Istria, Croatia)

Author - Percan, Tihomir, Croatian Conservation Institute, Svetvincenat, Croatia (Presenting author)
Keywords: analysis, decoration, Neolithic, pottery
Presentation Preference - Poster

Due to its geographical position on the crossroads of ancient paths, the Istrian peninsula was an important link between
east, west, north and south ever since prehistoric times. The Ljubičeva cave is situated in southern Istria in Croatia
near the village of Marčana and only 15 kilometers east of Pula, the peninsula’s largest city. Since 2008 to 2011 archaeological
excavations were carried out in cooperation between the Museo d’Anthropologie prehistorique de Monaco (Principality of
Monaco) and The Croatian Conservation Institute (Croatia). Recorded findings, particularly ones from the Neolithic period,
implicated that the cave was intensively in use during this period. A large number of pottery fragments were nicely decorated with
different motives and ornaments characteristic of the cultural phenomena from Early (Impressed culture), Middle (Danjo culture)
and Late (Hvar culture) Neolithic therefore making it the period of the most intense usage of the cave. With this poster we will
put the focus on the Middle Neolithic (Danjo culture) pottery and its ornaments (S shaped decoration, different spiral motifs,
incrustation). Furthermore, laboratory analyses of pottery and ornaments show the significance of this multidisciplinary approach
to archaeology and pottery. With these kinds of experiments, interesting results were collected. This work would not be possible
without good cooperation between archaeologists and the laboratory where the analyses were held (Metris, Pula, Croatia). We
also emphasise the significance of the modern scientific technology and methods to improve and advance knowledge connected
to technology and production of pottery during the archaeological periods.
TH6-04 Abstract 01
Ireland and its medieval diasporic communities
Author - Ö Nivala, University of Cambridge, Heidelberg, Germany (Presenting author)
Keywords: Acculturation studies, Migration, Postcolonial theory
Presentation Preference - Oral
For a region traditionally associated in recent centuries with its emigrant diasporic communities, Ireland has had a long and complex history with external migrant communities. In fact, the main strands of the nationalist mythos formulated during the floruit of nationalistic Romanticism were constructed in the context of – and often in contradistinction to – the outcomes of these episodes of migratory activity. While recourse will occasionally be made to sixteenth/seventeenth-century migratory and colonial activity, this paper will mainly compare and contrast two medieval case studies: the arrival of settlers firstly from Scandinavia and the Scandinavian diaspora between the ninth and twelfth centuries, and secondly from the broader Anglo-Frisian world from the end of the twelfth century to the mid-fourteenth century. While each of these episodes differed from the others, in terms of scale and outcome, there were some commonalities. For example, both involved settlers from geographically disparate homelands, such as modern-day Denmark and Norway and areas of associated settlement in the case of the former, and modern-day England, France, Flanders, Wales and Scotland in the latter. Furthermore, both might be regarded as colonialism, seen here as a particular form of predatory migration, at least in terms of the intentions of the initial migrants.
Before assessing the outcomes of each episode, it is first necessary to determine the extent of the associated migratory activity by recourse to a combination of material settlement evidence, documentary sources, the toponymic record and the evidence of material culture. Following this, using the same sources of evidence, an assessment will be made of number of cultural phenomena associated with migrant, diasporic and/or colonial communities, namely oslafication, the carrying on of certain cultural traits from the homeland beyond their usage in that homeland, acculturation, the adoption of certain cultural traits by one group based on their contact with another, and hybridisation, the coming together of several packages of cultural traits of diverse origins to form a new cultural package. Such discussions should of course only take place having absorbed the various lessons of recent scholarship regarding the mutable nature of ethnicity, and the ability of both groups and individuals to identify themselves in several overlapping – if not conflicting – ways, and so the penultimate section of the paper will discuss the evidence for the holding of multiple identities in the case studies based on different spheres of social life. Following this, the paper will close with a discussion of the utility of the application of the lessons learned from these case studies to other examples of colonial, migratory or diasporic phenomena at other points in space and time.

TH6-04 Abstract 02
Jugs and pots - beer and stew? “Hanseatic “impact on medieval and early modern Bergen (Norway)
Author - Dr Linnea, Jette, Mosegaard Museum, Odder, Denmark (Presenting author)
Keywords: Diaspora, Migration, Urbanity
Presentation Preference - Oral
The Early Modern period (c. 1450-1650) was a time of transformation in the Early Modern cities. Increasing Early modern migration into Scandinavia from the Netherlands, present Germany and the UK meant an influx of people, objects and ideas that profoundly transformed the cities, where the immigrants settled and formed diaspora communities with strong commercial and family ties to their homelands. The formation of such communities in established cities gave rise too series of reactions from the hostlands. Some meetings were peaceful; others were conflict-ridden. The migrants came with different agendas: conquerors and colonizers, traders, economic, political and religious refugees had their own agendas and aims, each of them influencing the interaction within the communities and between the communities and the local inhabitants. They were met with different reactions ranging from official welcomes to conflict and resistance. The urban Diaspora project is an ongoing cross-disciplinary and cross-national research project on immigration into medieval and early modern Scandinavia. In the course of the project our participants has uncovered traces of migration based in archaeology, history and science. All the project is in its final phase.The aim of this paper is to present the research framework and some results of the project, concentrating on the agendas of the many immigrant groups, that settled here, and the official and unofficial responses of hostland to the pressure of the immigrants. The Urban Diaspora is funded by the Danish Council for Independent research/Humanities.

TH6-04 Abstract 03
Urban Diaspora - Entangled diaspora communities in Early Modern Scandinavia
Author - Dr. Linnea, Jette, Mosegaard Museum, Odder, Denmark (Presenting author)
Keywords: Diaspora, Migration, Urbanity
Presentation Preference - Oral
The Early Modern period (c. 1450-1650) was a time of transformation in the Early Modern cities. Increasing Early modern migration into Scandinavia from the Netherlands, present Germany and the UK meant an influx of people, objects and ideas that profoundly transformed the cities, where the immigrants settled and formed diaspora communities with strong commercial and family ties to their homelands. The formation of such communities in established cities gave rise too series of reactions from the hostlands. Some meetings were peaceful; others were conflict-ridden. The migrants came with different agendas: conquerors and colonizers, traders, economic, political and religious refugees had their own agendas and aims, each of them influencing the interaction within the communities and between the communities and the local inhabitants. They were met with different reactions ranging from official welcomes to conflict and resistance. The urban Diaspora project is an ongoing cross-disciplinary and cross-national research project on immigration into medieval and early modern Scandinavia. In the course of the project our participants has uncovered traces of migration based in archaeology, history and science. All the project is in its final phase.The aim of this paper is to present the research framework and some results of the project, concentrating on the agendas of the many immigrant groups, that settled here, and the official and unofficial responses of hostland to the pressure of the immigrants. The Urban Diaspora is funded by the Danish Council for Independent research/Humanities.

TH6-04 Abstract 04
Migrations in Early Modern Scandinavian towns. The Nya Lüdöse case
Author - Dr. Roslan, Christina, Arkeologiska SHMM, Töölö, Sweden (Presenting author)
Keywords: Early Modern, Migration, Scandinavia
Presentation Preference - Oral
The town Nya Lüdöse existed between 1473 and 1624 on the west coast of Sweden. The written sources from the town are sparse and cover only the last decades of its existence. In this paper I will discuss strategies for identifying immigrant households from the archaeological record with emphasis on how to distinguish between diaspora identities and other overlapping identities such as occupation, social and economic status.
TH6-04 Abstract 05

Early Modern Immigrants: The City of New Lōđoše in the Historical records

Author: PhD Larsson, Daniel, University of Gothenburg, Göteborg, Sweden (Presenting author)
Keywords: Early Modern, Immigrants, New Lōđoše
Presentation Preference: Oral

The city of New Lōđoše was established in 1473 as a gateway for trade between Sweden and Western Europe. About 150 years later, in the early 1620s, the city lost its privileges, and the citizens were forced to move closer to the sea, to what is now modern-day Gothenburg. In the research project Urban Diaspora – Diaspora communities and materiality in early modern urban centers, New Lōđoše is defined as an “immigrant city”, while the other two cities in the project, Elsinore and Aalborg, are classified as a “cosmopolis” and a “provincial city” respectively. The amount of preserved historical records differs for these three cities. For New Lōđoše, no written document has been found that makes it possible to identify owners of excavated plots or to study individual families thoroughly (e.g. marriage strategies, networks, and materiality). On the other hand, the discovery of a number of tax poll lists from 1599-1610 has made it possible to analyze the town in other ways. The compilation of individual data from these lists not only shows a city with a number of inhabitants of Dutch and German origin and significant socioeconomic differences, but also provides a more precise idea about the city districts: their size, population, and economic capacity, and the occupational status of their inhabitants.

TH6-04 Abstract 06

Archaeological excavations of Dutch settlements from the 16th-17th century in Elsinore, Denmark

Author: MA Appel, Liv, Museum Nordjylland, Hjørring, Denmark (Presenting author)
Keywords: Diaspora communities, Historical archaeology, Migration
Presentation Preference: Oral

The magnificent borough of Elsinore, situated on the narrow Sound between Denmark and Sweden, is of special interest concerning the archaeology of the wealthy Dutch immigrants in the 16th-century. Since 1429 every ship passing through the Sound had to moor at Elsinore roads in order to pay the Sound toll taxes, and the Danish and foreign merchants made good money trading with the foreign ships. The increased Dutch immigrations following the wars in the Netherlands in 1587, coincided with a period marked by growth and progress for the town as the king Frederik II rebuilt the castle of Kronborg. Many well-established Dutch merchants settled at the sandy area situated between the town of Elsinore and Kronborg Castle. This new town quarter, earlier known as Sanden, i.e. the Sands, got an abrupt end due to the Swedish attack in 1658. Recent archaeological investigations in connection with extensive construction work in this area, which were until recently hidden under the former shipyard area, have revealed remnants of buildings, culture layers, latrines and wells connected to the rich 16th-17th century settlements. The fauna and the botanical remains reveal, as do the archaeological finds, that the Dutch merchants in Elsinore dined on the finest quality food and on imported tableware in faience and ceramics.

TH6-04 Abstract 07

Can an animal bone assemblage indicate a diaspora?

Author: Dr. Enghoff, Inge, University of Copenhagen, Copenhagen, Copenhagen, Denmark (Presenting author)
Keywords: Animals, Diaspora, Entangled Migration, Zooarchaeology
Presentation Preference: Oral

Analyses of archaeological animal bone assemblages sometimes provide evidence of successions and/or coexistence of different cultures. Thus, the species present and their relative frequencies at the site Gården under Sandet, Greenland (ca AD 1000-1400) show that the Norse settlers imported European domestic mammals and partly subsisted on these, but that over time the importance of native seals increased, whereas the importance of cattle decreased. Cutmarks etc. on the bones may also provide clues; for example bi-perforated metapodia, mostly of sheep, from the Danish site Ribe (AD 725-865) indicate that bone marrow was obtained this way which seems to be an ancient tradition in Scandinavia which has been exported to England (several sites, 9th-11th centuries AD), where bi-perforated metapodia have been found only in ‘Anglo-Scandinavian’ layers. The representation of individual skeletal elements in the material may also reveal particular cultural traits, such as the herringsbone material from the Danish site Silke Væstby (AD 1290-1380) which shows that the procedure of gilling the herring is not a Dutch invention which has been exported, as indicated by written sources, but was practiced in Denmark much earlier. The interpretation of the animal bone assemblages is complicated by the fact that different classes within a single society used different species of animals.

Aspects of the animal bone material from Elsinore, Denmark (16th-17th centuries AD), analysed as part of the Urban Diaspora project, are presented with a view to establishing whether the material provides evidence of traditions of the Dutch diaspora.

TH6-04 Abstract 08

Tracing ethnicity in food consumption - the case of Nya Lōdöše

Author: Maltin, Emma, Bohusläns Museum, Gothenburg, Sweden (Presenting author)
Keywords: consumption, ethnicity, fish bones
Presentation Preference: Oral

The present paper deals with the question to what extent ethnic identity can be traced in the archaeological remains of food consumption. Within the research project Urban Diaspora – Diaspora communities and materiality in early modern urban centers it was asked whether it was possible to distinguish differences in consumption between plots in the town of Nya Lōdöše (1473-1624), Sweden. The town was situated at the Swedish west coast, and was characterized by a multilingual population largely consisting of merchants, soldiers and sailors. From 2013 and onwards comprehensive excavations covering large parts of the town have been conducted. A range of different features have been excavated, from houses and backyards to streets and refuse pits. The clearly defined plots form a unique possibility to map differences in food consumption between households, and possibly connect the variation in the identity of the plot owner; eg. ethnicity, status or class.

Archaeological features clearly connected to the consumption in five town plots were selected, and special attention was given to the fish bone assemblage. The names of the plot owners are not known through written sources. It was apparent early on that there did exist interesting differences, especially regarding the distribution of species. Anatomical distribution and size were also investigated. The challenge lies, as always, in explaining the differences found. Are they due to the resident’s birthplace, social class or personal taste, only to mention a few possibilities?

TH6-04 Abstract 09

Foreign beer and gruel traditions in late medieval town Nya Lōdöše, Sweden

Author: PhD Heimdal, Jens, National Historical Museums, Hägersten, Sweden (Presenting author)
Keywords: archaeobotany, beer, immigrant
Presentation Preference: Oral

Food and beer traditions foreign to the local Swedish west coast have been traced by specific plant material in the late medieval town Nya Lōdöše, and may linked the local burgess of Germans or Dutch origin. Traces of hop beer brewing from the late 13th century is an anomaly in an area strongly dominated by sweet gale beers as late as mid15th century. Likewise, the use of millet stands out as foreign in relation to local tradition. It represent a imported foodstuff not attractive on the local market, maybe imported by German or Dutch househoulds for the making of certain traditional dishes – like gruels consumed on specific occasions. The traces of foreign food and beer traditions bear witness of a multi-ethnic town, with populations of traders preserving traditions of their homeland.

TH6-04 Abstract 10

Plant finds and migration in early modern (15th to 17th century) Aalborg

Author: MA Jensen, Peter Mose, Moesgaard Museum, Aalborg, Denmark (Presenting author)
Keywords: Plant finds, Migration, Early Modern
Presentation Preference: Oral

The Danish town of Aalborg from northern Jutland is known historically to have contained a number of immigrants in early modern times, mainly coming from the Netherlands. The perspective of the presentation will be to discuss the possibilities of observing signs of migration in analyzed plant material from the town.

The basis for the discussion is a number of recent archaeobotanical analyses dating from around 1400 A.D. until the late 17th century from Aalborg. The analyzed samples represent diverse archaeological contexts, ranging from 16th century garden soils or dung layers coming from a monastery and a later hospital area to different latrine samples. One latrine sample of particular note comes from a late 17th century latrine connected to the bishop’s house in the central part of the city.

TH6-04 Abstract 11

Freezing Danes and Strangers - The Tile Stove Heating in “Danish” and “Strangers” Households

Author: Assoc. Prof. Dr Atzbach, Rainer, School for Culture and Society, Højbjerg, Denmark (Presenting author)
Keywords: Court Culture, Ethnicity, Post-medieval Archaeology, Renaissance, Stove Tiles, Immigration
Presentation Preference: Oral

Architecture without borders
This paper seeks to explore, in how far it is possible to identify common traces or differences between "Danish" and immigrant households in Aalborg and Estonia during the renaissance. The focus will be put on stove tiles as type of material culture with a solid background of research and many possibilities to identify the origin of fabric, decoration and use. Moreover, the position of a stove in the house and its relationship to the development of dwelling habits will be discussed.

TH6-04 Abstract 12
In the houses of urban strangers?
Author - Historian Østergård, Jakob, Danish Centre for Urban History, Aarhus, Denmark (Presenting author)
Keywords: Early modern, Materiality, Migration
Presentation Preference - Oral

House and home form the most important cultural element of human daily life. How we live and how we furnish our homes define who we are and how we would like the outer world to see us. Things were no different in the Danish market town Aalborg in the seventeenth century. By use of the probate records this paper aims to investigate the differences and similarities of the material culture in the houses and homes of both immigrant and Danish merchant families in Aalborg. It will be discussed if the immigrant families came with their own material culture and in doing so contributed to the making of a cultural identity.

TH6-04 Abstract 13
A newcomer’s burial: anthropomorphic graves in medieval Transylvania (12-13th c.)
Author - Dr. István, Daniela Veronica, Brăov, Romania (Presenting author)
Co-author(s) - István, Ágnes, Híeronymus archaeology, Brăov, Romania
Keywords: anthropomorphic graves, medieval colonization, Transylvania
Presentation Preference - Poster

From the mid-12th century, guests from Central Europe, generally known as Teutonic, Flandrensi, and ultimately Saxons, were invited to settle in southern Transylvania (central Romania) in return for important economic and social privileges. The process of colonization was at its peak in the first decades of the second half of the 13th century, when several villages and towns were established in the hinterland of Sibiu, the largest city in southern Transylvania. Settlers continued to come well into the early 14th century, establishing enclaves of a German-speaking population. They developed a successful economic system, which enabled the establishment of strong settlements, the rise of an intellectual elite, and the growth of cities that invited many urban centres in East Central Europe. They also developed a distinctive religious architecture.

Very little is known about the first generations of colonists; written sources (very modest for the entire region during the period) confirm the identity of the human body, with a niche for the head. After this burial custom had been used for nearly a century (1150-1250), it suddenly disappeared. In recent decades archaeology has brought to light hundreds of such tombs scattered among other burials in Saxon cemeteries. Although it is clear that anthropomorphic tombs represented a specific ritual, not the rule, and that they were only used for certain members of the community and only within certain communities, some questions remain unanswered. Which was the rule? What was the meaning of this ritual within the same community? Why and when did some people prefer an anthropomorphic grave while others opted for a simple, rectangular grave pit? No satisfactory explanations have been provided to date.

Our paper/poster will introduce this problematic and will also show examples of anthropomorphic brick-laid tombs from the same area. Although their shape is related to the early settlers’ funeral customs, these graves appeared in a topographic and chronologically different context. Only a few dozens of such graves dating back to the 13th century are known, always found in archaeological contexts bound to newcomers settled in local, catholic communities.

TH6-05 Abstract 01
Adieu Hallstatt! Adieu La Tène! Revisiting old ideas
Author - Prof. emeritus Collins, John, University of Sheffield, Sheffield, United Kingdom (Presenting author)
Keywords: Celts, Iron Age chronology, Networks
Presentation Preference - Oral

At the 1984 conference of the AFEAF (published in 1986) I gave a short paper suggesting that if we could only get rid of the terms 'Hallstatt' and 'La Tène' we might write a different narrative of the European Iron Age. At that time I was looking specifically at cases in southern Germany, central France and Britain where ideas of chronological divisions and 'culture groups' were getting confused, and mixed with new unacceptable theories on the origin of the Celts and their supposed migrations. Only now is the concept of the 'culture group' being replaced with 'networks' and I personally have been trying to replace chronological 'phases' based on 'type fossil' (as originally developed by Reincke and Djecheita) with ideas of building chronologies on 'attributes' and sequences of 'horizons' signalled by single innovations or mutations in material culture. The concepts can also be applied to genetics and languages, and so help to re-integrate different disciplines which in recent years have grown apart (e.g. in 'Celtic Studies'). I will reflect on our nomenclature and whether terms like Hallstatt and La Tène should be abandoned, or can still be used, e.g. to denote styles of pottery, burial rites, etc. It means that we stop trying to construct chronological and cultural boundaries, and it can also affect basic things like the way in which we publish archaeological excavation reports.

TH6-05 Abstract 02
Bringing down the Wall or How precise independent chronologies facilitate negotiation of boundaries
Author - Dr. Hamilton, Derek, University of Glasgow, East Kilbride, United Kingdom (Presenting author)
Keywords: boundaries, chronology, Iron Age
Presentation Preference - Oral

Later prehistoric Europe has traditionally been studied in relation to a series of boundaries. These include the bounded chronological horizons which divide Late Bronze Age and Early Iron Age communities; geographical boundaries created through the development of separate national traditions of archaeological research; boundaries between perceived ethnic groups such as the Celts, Iberians, Veneti etc; and disciplinary divisions which separate ‘humanities’ from ‘scientific’ approaches. In recent years however this picture has begun to change. New research agendas seek to break down chronological horizons, with particular attention paid to transitional periods; more nuanced understandings of cultural identity are promoting cross-border collaboration, with a focus on zones of interaction between communities traditionally viewed as monolithic and bounded; interdisciplinary research frameworks are demonstrating the benefits of integrating scientific with more traditional approaches; and increasingly collaborative projects are fostering relationships and knowledge exchange on an international scale.

This session will draw on a number of papers from the ENTRANS Project; a HERA-funded collaborative project between the Universities of Bradford (UK), Ljubljana (SLO) and Zagreb (CRO), which explores cultural identities and encounters across the Late Bronze Age and Iron Age transition in the East Alpine region- a zone of interaction and encounters between Mediterranean societies and their traditionally perceived ‘barbarian’ neighbours. We also invite papers which seek to break down chronological, geographical or disciplinary boundaries within other parts of later prehistoric Europe (broadly, the Bronze and Iron Ages).
Boundaries provide an exciting and dynamic place to do archaeology, but they can also be fraught with troubles. Working across national borders often requires realignment of classificatory schemes for both ‘cultural’ groups and their associated material culture. To say a site belongs to ‘the Iron Age’ carries very different meaning to a person in Greece or in France. Even in a space as small as Britain, “the Iron Age” can mean different things when looking at either side of the Anglo-Scottish border. Moving through geographic boundaries, problems are only exacerbates when also faced with a boundary dividing one chronological period from another.

Drawing primarily upon examples from Iron Age Britain, from both sides of the Anglo-Scottish border, from the North to the South, and across the period of Roman contact and conquest, this paper will explore how the development of precise independent chronologies enables archaeologists to negotiate the potential perils in these liminal locations, allowing us to better model and understand social change across space and through time.

TH6-05 Abstract 03
Strangers at the Feast? Elites, artefacts and exchange in the 1st millennium BC in SE Slovenia

Author - Mason, Philip, Zavod za varstvo kulturne dediščine Slovenije, Center za preventivno arheologijo, Ljubljana, Slovenia (Presenting author)

Keywords: Iron Age, Late Bronze Age, Slovenia

Presentation Preference - Oral

The paper explores the role of elite contact and competition in the LBA and EIA societies in SE Slovenia in the transmission of artefacts and technologies around the Head of the Adriatic in the 1st millennium BC in the light of recent research. Exotic material in both mortuary and settlement contexts reflects changes patterns of elite exchange in the area, balancing the importance of a N-S route between the Eastern Adriatic and the Eastern Alps on the one hand and a E-W route between North and Central Italy through the Head of the Adriatic to Pannonia and the northern Balkan peninsula on the other.

It explores the way in which specific types of exotic artefacts were incorporated into the existing elite or prestige repertoire, connecting new cultural practices with local forms and traditions in the mortuary and transformation sphere. This is reflected in the adoption of iron technology, new forms of elite expression and the aggrandisement of centres of power that accompanied the transformation of the LBA Ljubljana group and gave rise to the EIA Dolopija group.

TH6-05 Abstract 04
Iron Age interaction in the Po river lowlands and in the pre-Alps of the western Veneto (Italy)

Author - MA Saccoccio, Fabio, La sapienza University of Rome, Roma, Italy (Presenting author)

Keywords: borders, Iron Age, Veneto region

Presentation Preference - Oral

The western Veneto region is geographically characterized by a landscape that progressively decreases in elevation from the peaks of the Pre-Alps to the plain shaped by the Brenta, Adige and Po rivers and tributaries. The western border of Veneto seems to show a long-lasting pattern of interaction between human groups at least since the Final Bronze Age. This long duration phase is still notably remarked by the current regional borders.

As recognized by several authors, the whole plain and pre-alpine areas seem to share the same material culture, during the Final Bronze and the Early Iron Ages (VIII-century BC), i.e. the Proto- and Palaeovenetian culture, but they strongly differ in the settlement pattern, showing a marked continuity in the South-Western Plain area, while the northern Pre-Alps seem to be affected by the wider Final Bronze Age settlement crisis. Finds related to the Trento-Lucone/Platten culture are found widely, showing intense supra-regional communication. At the same time, Leonardi proposed (2011) that the Pre-Alps hillfort settlements were characterized by power concentration deriving from the control of boundaries. Since this phase, albeit with diverging settlement patterns, the two areas represent the Western and North-Western borders of the Palaeovenetian world.

The VI century BC marks another step in the border interaction in both areas, as significant finds with different origins are recorded in both areas. The central place of Gazzo Veronese, close to the Mincio river, records the presence of Etruscan finds - a bronze double axe and a funerary statuette, one with an inscription - it seem to record a probable presence of high status figures (magistrates?) among the Palaeovenetian community, but probably only for a brief period. Quite different is the case of the northern area where the presence of epigraphic and material culture finds suggests a marked divergent identity pattern from the previous phase, influenced by Rhaetic elements (Fritzen-Sanzeno culture). Leonardi (2011) proposed to recognize in this case a phenomenon of hybridisation due to trade contacts between the local (Palaeovenetian) community and the Rhaetic human groups that finally succeed in acquire the cultural and political supremacy.

Both areas, in the IV century BC, appear to be strongly affected by the Celtic-Cenomani invasion that led to a profound change and reorganization of the considered archaeological landscape. Connections between the analyzed areas and the Celtic one, North of Alps, are recorded by finds since the end of VI-V century BC and interpreted by Bondini (2005) as mercenaries controlling the compulsory trade axis in the Pre-Alps belt. During the IV century BC the central place of Gazzo Veronese shows a contraction and a shift in the location of the inhabited area although problematic is still the definition of its ethnicity in this phase. Complex is generally the definition of the Palaeovenetian polity for the IV century BC due to the scarcity of archaeological evidences: only in a subsequent phase the presence of Celtic human groups is recorded in the area near Verona, Oppeano and Mantua leading to a contraction of the Palaeovenetian polity.

TH6-05 Abstract 06
ArkeoGIS: a multilingual free online tool to transcend borders

Author - Dr. Bernard, Loup, Université de Strasbourg, CNRS UMR 7044, Strasbourg, France (Presenting author)

Keywords: ArkeoGIS, multilingual, open

Presentation Preference - Oral

Originally developed in the Rhine Valley in order to gather together French and German archaeological data from the Bronze Age to the Early Medieval period, ArkeoGIS now aggregates more than 60 datasets covering in excess of 50,000 objects and sites on a Europe-wide scale. Its efficiency for trans-border archaeological and paleo-environmental studies has convinced us to move from version 3 to 4: the latter will offer the possibility to add new languages and chronological systems from summer 2016 onwards. The presentation will also focus on several, now redundant, trans-border problems and explain the solutions that have been chosen by the team of archaeologists, geographers involved in the project, and the ways in which the tool can be useful for any future cross-border project.
TH6-05 Abstract 07
Crossing the borders of the La Tène “world”

Author: Dr. Danièle Atètiva, Institute of Archaeology CAS, Prague, Czech Republic (Presenting author)
Co-author(s): Burík, Daniel, The City of Prague Museum, Prague, Czech Republic
Keywords: Baltic, transalpine, Adriatic, borders, La Tène

Presentation Preference - Oral

How can we design borders of and within the La Tène “world”? By spread of typical material culture? By distribution of characteristic sites (flat burials, oppida), by textual evidence of the presence of the “Celts” or according to the political-economic structures reflected in spatial distribution of characteristic coinage or pattern of long distance imports? Can the same material culture be found in different cultural areas, different political, economic or even ethnic entities? How we understand communities existing under the label of “the La Tène culture”? Who were their neighbours, counterparts and of what nature were their mutual contacts? Did they understand the concept of borders as we understand it nowadays? Do our recent findings show (mostly peaceful) coexistence of the main cultural groups in the transalpine area (especially “Celts” and “Germans”)? This is well attested especially along the long distance routes (Ambert route, Elbe route), in peripheries of traditionally used lands and at most of the major settlements. The true break seems to come with the later Germanic occupation, when many of the regions around the central European area (Saxony, Lusatia, parts of Bavaria, parts of middle Danube area etc.) remain deserted. However, there exist some evidence of the prevalence of these traditional connections.

The contribution aims to summarise research development made on the territorial issue of the La Tène culture and its northern (the “Germans”) and southern (the “Romans”) counterparts during the last ten years. We want especially to assess the importance of long distance routes (connecting the Adriatic, transalpine and Baltic regions) and to point out how contemporary study of these communications with the use of modern methods can change our traditional perspective of the concept of borders of the La Tène world.

TH6-05 Abstract 08
Exchanging rough materials between North and South of Europe at a time of transition

Author: Adj. Prof. Okonomidou, Stavros, Arcadia University Athens, Greece (Presenting author)
Co-author(s): Dr. Okonomidou, Artemio, Department of Archaeology, University of Nottingham, N02720, UK, Nottingham, United Kingdom
Keywords: Baltic amber, Cultural European “Koine”, Baltic area, North and South of Europe

Paper, Scientific analysis of rough materials

Presentation Preference - Oral

The Baltic area is in the deep North of the European Continent still reachable from southern people already in the Late Bronze Age as mythical “Hyperborea” destination. Different types of Baltic amber have been found in different archaeological contexts of many regions of the Mediterranean as proof of the interest of this exotic northern product. The Baltic area, though, is not only a potential “Hyperborean” destination in Late European prehistoric, source of exotic rough materials, but it could be the epicenter of early commercial exchanges which forms, for the first time, the vast network of a vast cultural “Koine” between South and North, and protagonist in decisive developments in the interrelations among diverse geographical districts of Europe. The last decades a variety of analytical methods/techniques has been developed and is applied to the characterization of organic and inorganic materials. The scientific investigation of amber can be proved an important tool in the hands of the archaeologist aiming to identify prehistoric social interaction, trade and exchange networks between ancient civilizations. In this paper the Baltic area will be examined, in its geographical context, with archaeological and scientific data provided.

TH6-05 Abstract 09
Was there any border to cross? Mobility and rejection of the alien in the Iron Age

Author: Dr. Gorgoue, Alexis, University of Bordeaux Montaigne, Pessac Cedex, France (Presenting author)
Keywords: Alterity, Identity, Mobility

Presentation Preference - Oral

Before going any further, the author wishes to warn that this paper is highly speculative. It is based on the observation of an apparent anomaly, where Iron Age patterns of mobility appear year after year more complex through isotopic studies, it remains pretty difficult to detect, based on the study of the material record (personal ornaments, burial practices, etc.), people of foreign origin in any one specific region. This observation suggests that, in the very specific case of individual mobility (i.e. not a mobility through group migration or deportation), geographical origin was more of an influence on one’s biology than one’s “social skin”. In other words, individual migrants would easily have adopted identity markers proper to their new community, thus abandoning those they brought from their original home. Yet, occasionally, isolated foreigners could be segregated through specific funerary practices, or be the target of specific forms of violence, sometimes ritualized. Exclusion of the alien, going as far as physical extermination, was not then beyond the scope of the Iron Age communities.

These practices seem to have remained quite scarce, however. Above all, they were embedded in a wider range of patterns related to violence used as a mean for negotiating social order, and involving exhibition of weapons, body parts, ritual murders, etc. In this paper, I would like to argue that the construction of Iron Age identities relied less on one’s geographical origin, but rather on one’s kinship and lineage. This allowed a fluid mobility along the verteces of a network whose complexity and range varied from one time to another and from one person to another, but always connected different geographical and cultural areas through interpersonal bonds built through many generations. In this context, the construction of identity obeyed rules much more complex than those based solely on ethnicity, embracing kin rivalry, devotion to the consensual social norms, etc. In other word, the detestation of the other was a multiscale phenomenon, not preeminently related to territorial identity.

One may ask, therefore, what was the relation between violence and alterity. As a conclusion, this paper will address this topic through some specific examples collected all throughout Iron Age Europe, and even on its margins.
TH6-05 Abstract 11
Textile Cultures of Iron Age Central and Mediterranean Europe: breaking down the boundaries

Author - Dr. Gleba, Margarita, University of Cambridge, Cambridge, United Kingdom (Presenting author)

Keywords: Central and Mediterranean Europe, ENTRANS, Textiles, Ceramic vessels

TH6-05 Abstract 12
Digital approaches to the presentation and analysis of Iron Age art

Author - Professor Armit, Ian, University of Bradford, Bradford, United Kingdom (Presenting author)

Co-author(s) - Evans, Adrian, University of Bradford, Bradford, United Kingdom

Co-author(s) - Bushby, Lindsey, University of Bradford, Bradford, United Kingdom

Co-author(s) - Becker, Katharina, University College Cork, Cork, Ireland

Keywords: Iron Age, 3D imaging, Ceramic vessels

TH6-05 Abstract 13
The cremated dead: investigating cremated remains from the Late Bronze Age/Early Iron Age transition

Author - Nicholls, Rebecca, University of Bradford, Bradford, United Kingdom (Presenting author)

Co-author(s) - Koon, Hannah, University of Bradford, Bradford, United Kingdom

Co-author(s) - Buckberry, Jo, University of Bradford, Bradford, United Kingdom

Keywords: Cremation, ENTRANS, Results

TH6-05 Abstract 14
Beyond the vessel: residue analysis and the understanding of identity in Early Iron Age Europe

Author - Bastos, Beatriz, University of Bradford, Bradford, United Kingdom (Presenting author)

Keywords: Ceramic vessels, Early Iron Age, Organic residue analysis

TH6-05 Abstract 15
‘Beyond the grave’ with the help of multidetector computed tomography and micro-excavations

Author - Dr. Črešnar, Matija, University of Ljubljana, Ljubljana, Slovenia (Presenting author)

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Keywords: cremation burials, micro-excavations, multidetector computed tomography

TH6-05 Abstract 16
Archaeology without borders

TH6-05 Abstract 17
The cremated dead: investigating cremated remains from the Late Bronze Age/Early Iron Age transition

Author - Nicholls, Rebecca, University of Bradford, Bradford, United Kingdom (Presenting author)

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Co-author(s) - Buckberry, Jo, University of Bradford, Bradford, United Kingdom

Keywords: Cremation, ENTRANS, Results

The paper presents the results of osteological analysis of cremated bone from the Late Bronze Age and Early Iron Age funerary assemblages of Croatia and central and eastern Slovenia. The doctoral research forms part of the larger HERA-funded ENTRANS Project to study the Late Bronze Age and Early Iron Age cultural influences of the East Alpine region.

Cremated remains, while rarely examined, can provide a valuable insight into the past. Although the potential for age and sex data can be diminished by the cremation process, the burnt remains can still offer information regarding pyre technology (e.g. heat and degree of burning), selection processes for deposition, and clues as to the condition of the body prior to cremation through the observation of fracture patterns.

In the past the process of cremation and subsequent deposition of human remains has, on occasion, been described as reflecting egalitarian social structures, or even the idea of a ‘poor man’s grave’, especially in comparison with more elaborate Iron Age funerary monuments. The examination of cremated remains from unfilled cemetery sites in modern day Slovenia, and of the large Early Iron Age funerary complex of Kapitol in northern Croatia, has offered an additional level of understanding regarding prehistoric attitudes to the disposal of the dead.

The investigation seeks to cross boundaries, not only of geographical and chronological terms, but also in regards to strategy. Interpretations draw upon both scientific and more traditional approaches as a means of enriching interpretations of funerary processes in the past.

TH6-05 Abstract 16
Archaeology without borders

TH6-05 Abstract 17
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TH6-05 Abstract 18
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TH6-05 Abstract 19
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TH6-05 Abstract 70
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TH6-05 Abstract 71
Archaeology without borders
depositional processes, which play an important role in the final interpretation of the graves, burial rites etc. It has furthermore shown that we have to shed new light on older published data and sometimes 'traditional' interpretations.

The multidisciplinary computed tomography connected with the macro excavation until now did not make it into the standardized grave research 'tool-box', but it is certainly on the way there.

TH6-05 Abstract 16
Open-accessed access to Late Bronze Age societies in southern Carpathian Basin

Author - Lorenz Dzidic, Daria, Institute of Archaeology, Zagreb, Croatia (Presenting author)
Co-author(s) - Radoš, Sinisa, Croatian Academy of Science and Arts, Zagreb, Croatia
Co-author(s) - Raini, Sisra, Institute for Anthropological Research, Zagreb, Croatia

Keywords: communities, Late Bronze Age, mortuary practice
Presentation Preference - Oral

Late Bronze Age communities in southern Carpathian basin are known through different cultural patterns/cultures/groups. The research project Late Bronze Age mortuary practices and societies in southern Carpathian Basin (LPF-71-2013-537), funded by Croatian Science Foundation, combines archaeology, anthropology and archaeozoology in attempt to reconstruct burial customs and shed more light on societies that have practiced them, while questioning existing hypothetical models and their territorial and temporal boundaries. Research methodology is based on independent analyses in each field to bypass possible biases, followed by comparison and integration of all data in further discussion and interpretation. Preliminary results indicate benefits of this open-minded approach to Late Bronze Age societies in southern Carpathian Basin.

Working independently anthropologists and archaeozoologist are less biased by the existing models in archaeological literature in their interpretation. This "bottom-up" approach is based on more credible evidence which occasionally do not correspond with existing hypothetical models of past societies.

Observed treatment and disposal of bodies, selection of grave goods and overall deposition, suggest different criteria of which some obviously reflected tradition while others indicate innovations presented by individuals living in these communities. Moving beyond the existing borders, it is possible to see images of the "small worlds" that overlap in the contact networks of practiced customs. Some customs (e.g. cremation of deceased, animal meat as offering of food, and various sets of vessels as containers for food and drink) could be examples of tradition in transitional period from Late Bronze to Early Iron Age in southern Carpathian Basin. Even with the application of open-minded approach, invisible borders still exist, but defined by the people that we investigate, rather than researchers.

TH6-05 Abstract 17
When traditions of pottery making reveal boundaries: a case study from the Upper Rhine Valley

Author - Philippe, Marie, Université de Bourgogne, UMR 6298 ArTeHiS, Strasbourg, France (Presenting author)

Keywords: ceramic technology, Late Bronze Age, social network
Presentation Preference - Poster

Between Vosges and Black Forest mountains, Bronze and Iron Ages (10th-8th century B.C.), modern France and Germany, the context of this study defies borders. In the Upper Rhine Valley, at the end of the Bronze Age, one can a priori hardly expect to reconstrukt boundaries because of a standardisation of the material culture, and the point is more about interactions’ significance. During Late Bronze age, the cultural entity “Rhin-Suisse-France Orientale” or “RSFO” (“Rhin-Switzerland-Eastern France”) has a core on the Rhine section between Basel and Karlsruhe. Since the 9th century B.C., this cultural entity dissolves, turning gradually to the Hallstatt one. This paper aims to focus on the people who experienced this transition period, in a supposed “flow corridor”. Which communities lived there, standing out and interacting with each other? Does it match with geographical features? Does it change through time?

According to the anthropology of techniques, ceramic shapes operate in a set of defined steps or, especially shaping sequences, can vary depending on cultural factors and material constraints. It leads to technical traditions specific to social groups. Social boundaries can thus be defined by the limits of the transmission network of technical traditions. About 50 technical features (for example bottom forming technique, finishing technique applied on the outer surface of the rim…) were analysed on 830 well-preserved pottery, sampled on 19 sites distributed from the south to the north of the valley section. A statistical classification procedure has been developed, based on biographical methodology, to model the diversity of technical traditions. It first appears that a technical background is similar on the entire area, with the omnipresence of the coiling technique. However forming methods and sequences are very different and reveal a great variety, which is related to the morphology of the potteries and to their spatial provenance. This distribution indicates that geographical potteries (like mountains or the Rhine river) do not impact on social boundaries. Moreover, technical traditions go through chronological limits and bring thus a complementarity approach to artefacts’ morphology to understand transition mechanisms.

TH6-05 Abstract 18
There is Power in a Cohort. Between Myth and Reality in the Development of Warfare in Scandinavia

Author - MA Kolberg, Are Bjarsten, Freelance/independent, Oslo, Norway (Presenting author)

Keywords: Iron Age, Viking Age, Warfare and tactics
Presentation Preference - Poster

When you hear the word Viking Age, there is a high likelihood that you will associate it with a dark and lawless age, set in Ultimo Thule, in which individual warriors fought for personal glory, perhaps even doing so in a drug induced state of fury. Inevitably, the berserkers spring to mind, sometimes sided by images of warriors in horned helmets, reflecting the imagery presented to us in various mass media. This type of imagery can at least be traced to the Victorian era, probably helped by 18th century Swedish natural historian Samuel Odmann who, by drawing analogies to Siberian shamans, hypothesised that the berserkers were in fact in a state of trance induced by eating mushroom. In my paper I wish to go beyond the myths and fiction in order to convey a more nuanced picture of the development of early Scandinavian warfare with an emphasis on Norway and the Viking Age. The archaeological evidence suggests a highly organized society in which justice and equality did matter, a tale supported by the written sources and the historic record. Although some of the early sagas in fact do mention berserkers and men clad in wolf and bear pelts, this is most likely to be ascribed to origin myths and warrior cult. My idea is that there is a distinction is to be made between the realms of mythology and actual warfare. The latter may have been very much inspired by Roman warfare. Battles were fought in closed formations; lines divided into cohorts, and with standardised equipment. Going on individual rampages would probably not help you win a battle; there was power in a cohort. As for the realm of myths and warrior cult, this does not rule out organised warfare as mythology and traditions always have been important. This was certainly important within the Roman legions, some types of legionsaries would actually dress up in animal pelt (remember that the wolf was an important animal, connected to the very birth of Rome as well as to the god of war Mars). Myths and traditions still matter in modern day society. In fact, as I am arguing, the roots of social organisation and the Viking Age/early medieval proto states in Scandinavia and Norway may be traced back to the Younger Iron Age, if not even earlier. I will induct my theory from a host of different sources ranging from early texts to archaeological finds, among which standardised arms play a major role. One of my arguments is that a high numbers of specific arms dictate specific tactics. One of the oldest laws in Norway states that a battle able man should be equipped with a spear, a sword or axe, and a shield. This is clearly meant for closed formations. Furthermore, there has been a lot of renewed focus on the high degree of social organisation in Viking Age Scandinavia, but warfare seems to some extent to be neglected.

Variations in the Development of Warfare in Scandinavia
“DUSTY” ARCHIVES AND ARCHAEOLOGY: OLD INFORMATION – NEW PERSPECTIVES!

Friday, 2 September 2016, 09:00-16:00
Faculty of History, Room 332

TH6-06 Abstract 01

KAFU - A network for archive studies

Author - Dr. Neumayer, Heino, Museum für Vor- und Frühgeschichte, Berlin, Germany (Presenting author)

Keywords: Archive Archaeology, International, KAFU

The situation after the fall of the iron curtain also allowed a research to the remain of the collections from former East Germany and the eastern Baltic region which had been partly destroyed or scattered as a result of the 2nd World War. To achieve this in 2001 the „Kommission zur Erforschung von Sammlungen Archäologischer Funde und Unterlagen aus dem nordöstlichen Mitteleuropa (KAFU)“, which was founded in 2001, is to reconstruct in international cooperation – Germany, Poland, Russia, Lithuania – the archaeological collections and documentation that was destroyed or dispersed in the Second World War, and so to render this “lost archaeology” accessible for research once more. The session shall provide a forum for contemporary, interdisciplinary and theoretical research approaches towards archival studies. Specific topics are welcome to span all archaeological ideas, regions and periods.

TH6-06 Abstract 02

The Sources of the „Archival Archeology“ in the Carpathian Basin

Author - Dr. Proházková, Peter, Archeological Institute of the Slovakian Academy, Nitra, Slovakia (Presenting author)

Keywords: Archival Archeology, Archivals, Carpathian Basin

The Carpathian Basin is as a venue of people from the prehistory. A multifarious archeological material is characteristical for it. The Carpathian Basin is an important territory of the archeological research in Europe. But about a large part of the artifacts and sites are not enough data available. Although the archeological research in the Carpathian Basin has nearly two hundred years of history, but since centuries come timeshares, hoards, graves and artifacts to light. About these data are in official files, which are in the archives. From the 19. centuries amateur archeologist conduct research and they corresponded about their discoveries and finds with the museums and scientists. A part of the artifacts comes to the museums in Hungary and abroad. These old finds composed the basic of the modern archeology in Europe. The „archive archeology“ plays an increasing role in the international research. Its meaning is in gathering and publishing of all the written sources, locating and publishing of the old findings, mentioning the archaeological finds and sites. With the help of these written sources and reports it is possible to enlarge and precise the knowledge about older sites, archaeological contexts and to reconstruct the finding entities. These records are unknown, unprocessed and unpublished. With help of some examples I would like to present the potential of the „Archival Archeology“ for the today research.

TH6-06 Abstract 03

Reichs-Limeskommission and WHS Upper German-Raetian Limes – Sources and research from the archives

Author - Dr. Hüsken, Claus-Michael, German Archaeological Institute, Frankfurt / M., Germany (Presenting author)

Keywords: cultural heritage management, Reichs-Limeskommission, Upper German-Raetian Limes

The “Limesarchiv“ of the Romano-Germanic Commission (RGK) include large parts of the archive and the collections of the Reichs-Limeskommission (RLK). The RLK explored the Limes mainly from 1892 to 1903 between the Rhine and the Danube. The scientific results were edited by E. Fabricius in the series "Der Obergermanisch-Raetischen Limes des Römerreiches“ (ORL) from 1894 to 1937. Research results up in the 1930s are included therein, after the actual workings of RLK. With the final dissolution of the RLK in 1939 the archives came to the RGK. It includes a stock of real administrative records, which was 1991 archived. By far the greater parts are collection items of reports, diaries, correspondence, maps, plans and photos between 1888 and 1939. The stock is supplemented by the card file for the Fundinventorii ORL, reports in words and pictures about Limes inspections in the 1950s and 1960s and others. 2005 the Upper German-Raetian Limes became UNESCO World Heritage. Since then there is an increased interest in historical documents about this monument. The total inventory of the archives was already recorded in 2004, funded by the State of Baden-Württemberg. The documents for the Bavarian Limes section were registered and digitized 2009/2010 with special funds from the Free State.

The Deutsche Limeskommission (DLK) promotes workshops of old excavations and research on the Limes by doctoral scholarships for some years now. Thus, the Limes archive now serves as an information and data source for master and doctoral theses, for contemporary historical studies, for articles and databases on special topics, issues related to the preservation of the monument, for different types of visitor information and advice on World Heritage and for exhibitions in museums. Moreover, new questions arise by connecting the results of modern prospecting methods with the early field observations. Two research excavations at the Raitae wall were devoted to these issues in 2015.

TH6-06 Abstract 04

Scientific Archive of IHMC RAS: pages of European archaeology

Author - PhD Medvedeva, Maria, Institute for the History of Material Culture, Russian Academy of Sciences, St.-Petersburg, Russian Federation (Presenting author)

Keywords: documents, photographs, Institute for the History of Material Culture, Scientific Archive, archaeology

The Scientific Archive of the Institute for the History of Material Culture, Russian Academy of Sciences (HMC RAS), keeps invaluable documentary archeological Collections. Its history started from 1859, when the Imperial Archeological Commission (IAC) was established by Russian Emperor Alexander II. By the early 20th century IAC became coordination and control centre in archaeological and restoration studies of Russian Empire. IAC has accumulated unique archives of records groups and
photo collections, reflected archeological investigations in the entire Russian Empire. Fortunately throughout the following reorganizations in Soviet times Commission has not been eliminated, and the archives were preserved well. Moreover remarkable material was collected from: scientific societies and different organizations (for example, Moscow and Russian Archaeological Societies, Petersburg Archaeological Institute, Libraries of Emperor Nikolay II and Great Princes Konstantin Nikolayevich and Konstantin Konstantinovich), from personal collections of outstanding archeologists, artists, restorers, orientalists and other researchers.

Nowadays the Scientific Archive of IHMC RAS contains 107 record groups and 79 photo collections of researchers and organizations which unity about 700 thousands documents. These documents cover age from the 18-th century to the present day and are of great value to researchers in history of Russian archeology and culture, but the archives include also a large number of materials, which represent history, architecture and archeology of European countries. Most of them are related to the investigations carried out on the territory of Courland, Estland, Lithland, the Grand Principality of Finland and the Polish Kingdom, that once belonged to the Russian Empire. The Collections contain documents on the subjects of occasionally discovered artifacts; excavation documentation (field reports, including in German, photographs, drawings, maps); materials, which illustrate the archeological investigations and there projects; correspondence with European researchers and Scientific Societies; a numerous splendid photos, including glass negatives; of finds and architectural monuments; records and photographs from travels of Russian scientists in Europe, where we can find information about the museum collections and pictures of archaeological sites in Italy, Greece, France and others. Some of them have already been published, but many still remain unknown.

The documents on archeology of European countries mainly relate to the period up to 1917 and stored in the collections of organizations and in private collections of scholars. Archival heritage of IAC, Russian Archaeological Society, Moscow Archaeological Society and personal collections of A.A. Spiro, B.V. Farmakovskij, A.A. Bobrinskij, V.I. Smirnov are most interesting in this regard. All these materials can provide new documental resources for the history of European archeology. International cooperation could give the opportunity for their best attribution and introduction to the world science.

The Esquiline (Rome). Urban transformation and ancient topography between lost archives and Webgis

Author - Boi, Valeria, archaeological consultant, Roma, Italy (Presenting author)
Keywords: ancient topography, Open access to archeological documents
Presentation Preference - Oral

This paper is aimed at retracing the steps of the reconstruction of the ancient topography and of the archaeological potential of an area of Rome’s historic centre, which was the subject of a doctoral thesis in Methodology of the archaeological research, disputed in February 2016 in the University of Sassari.

The case-study area is the Esquilina District, located at the south-eastern borders of Rome’s inner center, in the Middle Ages, and until the last decades of the XIX century, the Esquiline was a suburban area, where a few religious complexes rose up in a waste area occupied by gardens and orchards and then by the aristocratic villas built in the XVII century. The landscape kept itself almost intact for centuries, as is shown in the historical cartography, from the XVII century bird’s-eye views to the renowned 1748 Nolli plan; this context changed sharply in a few years, when, in 1871, the city of Rome became the Capital of the new united Italian nation, and a major building expansion completely transformed the face of the XIX century city. In the aftermath of Italian Unification, in fact, the landscape was heavily twisted, and a regular urban pattern completely erased the original ancient morphology. In a few decades, between 1873, when the first town planning was approved, and 1930, when last buildings’ construction was completed, the specifically created “Archaeological Commission”, headed by Rodolfo Lanciani, tried to save from complete destruction the complex and extremely rich archeological context of the ancient Esquiline.

Archaeological findings were archived in the renowned in Lanciani’s “Forma Urbis Romae” and sometimes published in the journals “Notizie degli Scavi di Antichità” and on the “Bollettino della Commissione archeologica comunale”. In the following years, a lot of archive documents were dispersed in the archives of various State and Municipality offices, thanks to this doctoral research many of those documents are now accessible in a Open access web database, and this “lost archeology” is now accessible for researchers in a digital environment.

The biography of two Phoenician jars from the National Museum in Poznan

Author - Dr. Krueger, Michal, Adam Mickiewicz University in Poznan, Poznan, Poland (Presenting author)
Co-author(s) - Guszczek, Inga, Nicolaus Copernicus University, Torun, Poland
Keywords: archaeometry, archival holdings, Phoenician pottery
Presentation Preference - Oral

In the National Museum in Poznan, Goluchów branch, two ancient jars of clearly oriental origin can be found. Neither the provenance, nor the chronology of the artefacts is clear. This paper is willing to show that through archival, archaeometrical and typological studies it is possible not only to determine the specific origin and detailed chronology of the vessels, but also to reconstruct an important part of their cultural biographies. The studies of the private correspondence from the end of the 19th century between Izabela Dzialyska, née Czartoryska, the buyer, and Alfred Louis Delattre, a French missionary and archeologist working in Cartage, are revealing the context of acquisition of the artefacts. The archival holdings are clearly showing that the oriental art collection in Goluchów was much bigger than previously thought. What is more, the information given by A.L. Delattre can be useful in determining the place where the jars were discovered. The vessels were also subject of recent archaeometric studies (X-Ray fluorescence spectrometry and petrographic analyses) in order to get the basic information about their technology and place of production. Having in this mind data, we are able to reconstruct the biography of the jars from their “birth”, through their deposition in a tomb in Cartage, ending in the art collection in Goluchów where they have been exposed as unrecognized items. The promising results of this small-scale investigation encourage the authors of this proposal to apply for a bigger research project based on the pottery and archival holdings from the former collection of Izabela Dzialyska.

Architecture of tumuli in Kosovo

Author - Dr. Ass. Baraliu, Sedat, Faculty of education, Prizhtina, Kosovo (Presenting author)
Co-author(s) - Aiq, Premitim, Institute of archaeology, Prizhtina, Kosovo
Keywords: Grave, Kosovo, Tumuli
Presentation Preference - Oral

In this study it will be treated the architecture of tumul and relation with funeral ritual. Characteristic of tumuli in Kosovo, especially during the Iron Age when their number has increased, is building variety. There are even cases when in one necropolis are noticed various types of tumuli. Tumuli in the territory of Kosovo are built with stones and soil; however, there are cases when the tumuli are built only with stones, while the soil is used as an additional element. Moreover, when the tumuli are built with soil, the stones have served for building architectural parts, such as: surrounding ring, grave constructions, cover and tumulus cairn.

The forms of grave construction are not the same in all necropoleis. Based on the construction, the graves can be classified as of rectangular shape, oval, elliptical circular, semi-circular as well as graves with simple pit. Each type of grave will be treated separately.

Rituals and funerals ceremony will be also elaborated in this paper taking into consideration that during the ceremony and burial are followed a number of rituals and funeral ceremonies starting by building the tumulus, opening the grave and the burial process. Furthermore, even in the cases of cremation are followed a range of rituals and ceremonies.

The Prussia-Museum in Königsberg/Ostpreußen. New archaeological research on an old archive

Author - Dr. Elstbracht, Heidemarie, Museum für Vor- und Frühgeschichte, Berlin, Germany (Presenting author)
Keywords: pre-war archive, reconstruction of the archaeological landscape, research in former East Prussia
Presentation Preference - Oral

Up to World War II the famous Prussia-Museum in Königsberg kept a comprehensive archaeological fund which had been brought together during more than 150 years of research from the end of the 18th centuries onwards. The fund included findings from excavations as well as documentary record covering the entire region of the former province of East Prussia. After the war, almost all collections were regarded as being lost but big parts have been rediscovered unexpectedly after the turnaround of 1989/1990 in Berlin, in Kaliningrad and in other places. The materials that remained are mainly fragmented and incomplete but still bear witness of the immenseness of the pre-war archaeological research as well as of the richness and diversity of the historical landscape in the south-western Baltic region. Since 2012 the “Academy of science and literature in Mezin, Germany” realizes a huge project on the reconstruction of the archive materials from the Prussia collections, conducted by the Centre for Baltic and Scandanavian Archaeology in Stockholm and the Museum of Prehistory and Early History in Berlin. The project aims at supporting contemporary archaeological research by making the old data available once again. The paper introduces the goals of the project and describes the specific needs, selected methods and first results of this process: How and to what extent can we reconstruct the ‘archaeological landscape’ in former East Prussia before 1945 and thus create a basis for modern investigations and research in this part of Europe?
Rich Roman Iron Age graves, equipped with Roman imports, are interpreted as being burials of persons of high status in the social hierarchy. Unfortunately a lot of these graves were discovered by accident and the documentation of the finds is poor. So one can say, an inexpert discovery is quite a main attribute of the Roman Iron Age prinely graves. Nevertheless to say that this fact means a big loss of information. A second, not less important is the state of analysis and publication of the finds. Not infrequently we actually do possess more informations than published. It is difficult to explain, but especially in case of prinely graves very often not all data were released in publications. Studies of old finds, stored in the museums, deliver new data and give new basis of interpretations. This will be shown by the example of some so-called prinely graves of the Libušín type. At the Roots of the Roman Period Archaeology

Oscar Almgren was one of the most famous archaeologists who dedicated his work to issues concerning the Iron Age. His PhD thesis (studien über nordeuropäische Fibelformen der ersten nachchristlichen Jahrhunderte mit Berücksichtigung der provinzialrömischen und südslowakischen Formen) was a milestone in the archaeology of the Roman Period. It was defended and published in 1897. The significance of Almgren's work results not only from an in-depth analysis of fibulas but also from a wide territorial range of his research. In the end of the 19th c. his Swedish archaeology studies found presented in at least 117 museums placed all over Europe. The private archive of Almgren is an important result of those studies. Currently it is held in the Swedish National Heritage Board in Stockholm. Our paper will be one of the first presentations concerning the legacy of Almgren. His archive is a rich and diverse set of documents. Among others it contains press cuttings, letters, notebooks, manuscripts, as well as personal photographs. Emphasis will be put on presenting a card file (among other things so called Fibulor), which is the largest and the most compelling part of the whole archive. Its content can be estimated at over 6000 of sheets with artifacts fine pencil drawings and information.

It is also worth mentioning that Almgren collected data concerning not only fibulas but also on other finds (e.g. Roman imports, weapons, bracelets, necklaces or buckles and belt fittings), which is an important contribution to chronological and regional studies. Materials present in the archive are of very high scientific value and importance. For many archaeological objects lost during the Second World War it is often the only surviving documentation.

The Herbert Jahnkuhns scientific legacy – an old archive as a source for modern research

Herbert Jahnkuhn, one of the greatest, albeit most controversial characters of the 20th century German archaeology, is known primarily as a researcher of Hallstatt empire (Schleswig), or as one of the initiators of the new edition of the monumental Reallexikon der Germanischen Altertumskunde publication. However, it is worth to remember that the beginning of his scientific career (determined by his doctoral thesis submitted in 1931) was related to his home country – East Prussia. The main subject of his doctoral thesis was the Early Roman Period in Samland. Nevertheless Jahnkuhn collected data from the whole region of East Prussia, going well beyond the scope of the defined geography. He created over a dozen hundreds of cards with notes and drawings, documenting few thousands of finds from the Roman, as well as Migration Periods originating from the vast area between Lower Vistula and the Nemunas. Fortunately, scientific legacy of Jahnkuhn has survived the Second World War and is kept in the Archives of Archäologischen Landesmuseums Schleswig.

The personal registry of Jankuhn, created as a starting point for his doctoral dissertation, had some limitations. It didn't include descriptions of pottery or peculiarities of funerary rites. But, despite these gaps and constraints, Jahnkuhn's card files allow the modern researches to reconstruct the archaeological picture of East Prussia during the Roman Period. First of all, long sequence of grave assemblages can be established, helping to clarify different problems of chronology. For example, the separation of a large group of objects with eye-brooches of the Almgren 61 type, marks the latest stage of B2 phase. In spite of appearances, it is not the antiquarian problem only – precise dating allows to determine concentrations of archaeological sites that can be identified with Galindai and Soudlini mentioned by Polhem and as such it could serve as an excellent starting point for the reconstruction of the European world of Barbaricum. Although, as it is mentioned before, Jahnkuhn's registry was dedicated to research the Early Roman Period, it included also data on large series of finds from the Late Migration Period. One of the most interesting objects is the iron scabbard from Mazurian cemetery in Mietkie (former Mingen). Scandinavian import, and the first find of this type in East Prussia. This shows clearly that, although other scholars, primarily F. Jakobson, documented the Migration Period of the East Prussia, Jahnkuhn's archive could be a valuable source of research for this period.

In conclusion it has to be stated that Jahnkuhn's archive forms a very rich source for knowledge about east-Prussian 'lost archaeology'.

As a case study on the potential of archival archaeology

The cemetery of Linkuhnen (Rževskoe): A case study on the potential of archival archaeology

In the last 20 years, colleagues from Germany, Poland, Russia and Lithuania have collectively worked on the reconstruction of the archaeology in former East Prussia before WW II. The re-evaluation of archaeological research before 1945 in the region between the Vistula River in the west and the Nemunas River in the northeast remains a puzzle with many pieces missing but is of great importance to the modern archaeological research in Poland, Lithuania and the Kaliningrad Oblast due to the extremely dense distribution of archaeological finds.

One of the "lost" archaeological sites is the cemetery of Linkuhnen at the Nemunas River, which was excavated between 1928 and 1939 by the Prussia Museum in Königsberg (Kaliningrad), with a large number of finds from the Roman Iron Age, Migration Period and the Viking Age. The results were never properly published and all objects were considered to be lost after 1945. With the re-discovery of the Prussia collection and archives in Berlin in 1990, colleagues from different countries established a scientific network to open up archival sources for international research. The cemetery of Linkuhnen can serve as an example of the potential that still lies within the archaeological and archival material that survived at different institutions all over Europe.

The reconstruction and analysis of the original field documentation and other archival sources show the importance of Linkuhnen for the very first time: the cemetery was used for over 1000 years from the Roman Iron Age and the Migration Period to the Viking Age with almost 500 burials and 5000 grave goods. With over 150 swords from the Viking Age, Linkuhnen is the biggest site of Viking Age sword weaponry in the Baltic and Scandinavia. We also know of nine swords with Ulfberht initials, what makes Linkuhnen the site with the highest number of Ulfberht blades in Europe. The presentation deals with the problems and solutions during the process of re-evaluating the archaeological significance based on the objects and archival material from Linkuhnen.
The cemetery of Wiskiauten is located at the south-western corner of the Curonian Lagoon, close to Zelenogradsk in the Russian Oblast Kaliningrad. Immediately north of Wiskiauten lies a small forest known as Kaup, where a large burial site with Scandinavian grave goods was found. The burial site may have originally consisted of up to 500 burials. Unfortunately, it is difficult to reconstruct the original layout and structure of the cemetery due to the lack of excavation documentation. As a part of the former Prussian state, the area around Wiskiauten has faced profound changes between German, Soviet and Russian rule and administration. These circumstances have led to the loss of a large part of the early research documentation and most of the finds, especially during the 2nd World War and the resulting destruction and plundering of the Prussian Museum in Kaliningrad. After the War large parts of the documentation and a small number of artefacts reappeared in different parts of Europe. Consequently, today material from Wiskiauten can be found in Stockholm, Olzyschn, Berlin, Marburg, Schleswig, and of course Kaliningrad. These complex conditions could explain why a complete presentation of the research results has never been published, although archaeological interest in the site is unbowed. Since the 1870s, at least 12 different excavation teams from Germany, Sweden and Russia have worked on the grave mounds of Wiskiauten and the archaeological investigation is still ongoing under Russian guidance. Thus it is the aim to give a complete presentation of the research results available from all accessible excavations in Wiskiauten, and to reassess the conclusions from the early days of archaeological research. Moreover, it is essential to compare the grave architecture and the material culture of the burials in order to connect them to local Scandinavian customs, as well as to similar sites on the Baltic Sea and in Russia that have burials with Scandinavian links, in order to reevaluate the duration and nature of Viking presence in late Iron Age Wiskiauten.

Excavating an Archive - The Irish Viking Graves Project

Author: Dr. Harrison, Stephen, University of Glasgow, Glasgow, United Kingdom (Presenting author)
Keywords: cemeteries, material culture, Vikings
Presentation Preference: Oral

Nineteenth-century Dublin saw the recovery of a substantial assemblage of Viking artefacts from several parts of the city, and particularly from the Kilmainham-Islandbridge area. Unfortunately, very little of this material was published at the time, and the surviving manuscript records are limited and contradictory. The Irish Viking Graves Project was set up to address these problems, and to produce the first comprehensive and accurate catalogue of these artefacts and the furnished Viking graves that they clearly represented. To do this, the archives of the National Museum of Ireland were digitised and subjected to a thorough analysis, considering features such as date, function, and authorship, and grave-goods from Dublin were recorded at several institutions in Ireland, the UK and Denmark.

The paper discusses the methodology used by the Project, which moved beyond archival records to consider the relationship between these manuscripts and surviving artefacts in various museums, as well as the relationship between the archives and cartographic evidence for Viking graves. By doing this, the paper demonstrates the potential of research of this type, and provides an Irish perspective for this session.

The paper will also engage with key research issues. Now that the catalogue has been published, we have the first (accurate) list of grave-goods from Dublin, divided into acquisition groups and linked to more or less specific locations around the modern city. But how can this new evidence be used to investigate Viking activity in the Dublin area and farther afield? Potential areas of future research include investigations of topography, which suggest links between burial sites and boundaries at local and regional levels; the use of artefacts to promote and sustain identities at multiple levels; and scientific analysis of some of these artefacts. Again, this will provide an Irish perspective on these key issues.

Forgotten maps – important information about the 3rd century AD graveyard Háven, Mecklenburg

Author: Dr. Voss, Hans-Ulrich, Deutsches Archäologisches Institut, Frankfurt am Main, Germany (Presenting author)
Keywords: cemetery, Late Roman Iron Age, unpublished maps
Presentation Preference: Poster

The extensive working papers of Friedrich Lisch (1801-1883) on the late Roman Iron Age inhumation graves from Háven, Ludwigslust-Parchim District in western Mecklenburg, which are archived in Wilgard Castle north of Schwerin, provide a very interesting insight into the lively scientific exchange between Lisch and leading Scandinavian archaeologists such as Conrad Engelhard, Christian Friedrich Herbst, Hans Hildebrand, Jens Jacob Asmussen Worsaae and others. The previously unpublished map of the site, drawn by Lisch’s son Friedrich Wilhelm Lisch in 1869, gives new and important information about the inner structure of the graveyard and its meaning for extra-Germanic relations between southern Scandinavia and Central Germany during the 3rd century AD. The grave categories as well as the grave furniture can be clearly differentiated: some graves have affinities with types found on Zealand in the North, while others are more similar to graves of the Hassleben-Leuna-group in central Germany. It seems that Háven was inf the fact a staging post between these two centres.

The gift of director of Königsberg's Museum Bezenberger

Author: Dr. Khomiakova, Olga, IA RAS, Moscow, Russian Federation (Presenting author)
Keywords: collection, archive data, Prussian Cultural Heritage Foundation Archive, State Historical Museum
Presentation Preference: Poster

In holdings of State Historical Museum in Moscow an old plate with archaeological finds resides. It defined as «Archaeological collection of Euruscan graves of Italy, from different places of Germany and East Prussia» (Accession number 97174, List 1133/XXVIII), and consists of 27 items (a strands of beads and stand-alone beads). According to register and information at the plate, written in old Russian orthography, the collection came in to the Museum not as the result of II World War, but before 1818. The right side of the plate contains two strands of beads from Livland and «Euruscan graves». Most interesting are names of «places of finds» from the left side: Russen, Stobingen, Lötzen, Trautten, Kalberg bei Rantau, Waren, Potwitten, Grebieten, Daumen, Eschenort, that are correlate to the names ofgraveyards from East Prussia, that were excavated in second half and the end of 19th century. Finds from these graveyards kept in Prussia-Museum in Königsberg. Miserable, but curious data in register reads as it was «gift of director of Königsberg’s Museum Bezenberger» from «non inventory fund». A search of information about
Archaeology without borders

Archaeology without borders is especially vividly observed in the scattered archival materials by K.V. Salnikov, A.P. Shokurov and R.G. Kuzeev. Also, scientists' of Bashkortostan). Ufa provincial archives (now the Central Historical Archives of the Republic of Bashkortostan) started to be formed of the Regional Statistic Committee, since 1867 it became the Provincial Museum (at present - the National Museum of the Republic Library: Manuscripts). Archaeological information about the territory of the Bashkir Urals began to be collected in 1834, on the basis Sweden (The Swedish National Heritage Board / The Antiquarian-Topographical Archive) and Great Britain (Cambridge University Union (the archives of the Republic of Kyrgyzstan), the archives of Finland (the National Library of Finland / Helsinki University Library), possible owing to international cooperation. Materials about the region’s archeology were stored in the archives of the former Soviet Foundation Archive in Moscow, it was accepted into museum fund. The comparison of data from Moscow and Berlin made possible to connect finds and archives, which were not attributed before; and casted light upon the chapter of the last pre-Revolutionary Archaeological Congress in Russia and the memoirs of Adalbert Bezzenberger. Done with the support of Russian Foundation for Humanities, Project No 15-31-01273.

TH6-06 Abstract 19
Archival Archaeology: experience of mapping and survey in SW Courland

Author: Dr. hist. Virse, Ingrida Liga, Latvian National Museum of History, Riga, Latvia (Presenting author)
Keywords: Archival Archaeology, systematic mapping, identification and research, SW Courland

Presentation Preference: Poster

The National History Museum of Latvia, Archaeological Department stores information about archaeological monuments and artefacts found across the territory of Latvia. The data chronologically covers a period from the end of 19th century to the present day. The largest amount of data originates from the interwar period, and it forms the basis for the documentation. During the work on the project Study of population and ethnic composition changes in southwestern Courland 1st millennium AD, systematic mapping, identification and research of SW Courland archaeological monuments and find locations is carried out. The work is based in the study of archives (National History Museum of Latvia archive contains information on approximately 200 archaeological monuments and locations of finds in SW Courland). During the course of the research, unexpected problems were encountered. Although the documentation of archaeological sites during the interwar period was generally precise, today part of the potential sites can’t be localised. This is mainly due to the loss of reported landmarks, changes in the terrain during the Second World War and the construction of Soviet military bases in the post-war period. The possibility of interviews is reduced by the depopulation of the region which continues until today.

TH6-06 Abstract 20
International cooperation of archives in the study of archeology of the Bashkir Urals

Author: Shuleeva, Ia, Ufa, Russian Federation (Presenting author)
Keywords: archives, international cooperation

Presentation Preference: Poster

The issue of fragmentation and disunity of archaeological documents stored in the archives of the Republic of Bashkortostan was raised in the beginning of the 1990s. Data restoration about archeological monuments and finds of the Bashkir Urals was made possible owing to international cooperation. Materials about the region’s archeology were stored in the archives of the former Soviet Union (the archives of the Republic of Kyrgyzstan), the archives of Finland (the National Library of Finland / Helsinki University Library), Sweden (The Swedish National Heritage Board / The Antiquarian-Topographical Archive) and Great Britain (Cambridge University Library: Manuscripts). Archaeological information about the territory of the Bashkir Urals began to be collected in 1834, on the basis of the Regional Statistic Committee, since 1867 it became the Provincial Museum (at present - the National Museum of the Republic of Bashkortostan). Ufa provincial archives (now the Central Historical Archives of the Republic of Bashkortostan) started to be formed in 1919. After formation of the Academy of Sciences in 1932, a scientific archive of Ufa Scientific Center of RAS started operating. Such diversity of the archives led to fragmentation of archaeological materials and sometimes even to their loss. Reorganization of the archives and document funds often results in loss of archaeological documents. Part of the archaeological archive materials was separated depending on the scientists’ workplace location, often there were no conditions for heritage storage. In Bashkir Urals it is especially vividly observed in the scattered archival materials by K.V. Salnikov, A.P. Shokurov and R.G. Kuzeev. Also, scientists' manuscripts can be transferred to some organizations after their death, which also leads to partial loss of the material, for instance, again, the long-suffering R.O. Kuzeev’s fund. If the World War II became the most destructive for the archival funds in some regions of the USSR, other processes can be observed in the rest of the country. The processes of mass loss of archival materials are related to revolutionary events and the Civil War. Active passion for archeology of the most educated part of society spread in the Ural region, led to the exchange of archaeological information with the European scientific elite. In the fund by E.H. Mirns (Cambridge University Library: Manuscripts) a fragment of correspondence between A.Pashkova, the owner of Voroneshsky plants (05.09.1913), and E.H. Mirns was discovered. Another significant impact on the preservation of archival archaeological sources was the period of the late 1930s - the period of repressions, during which not only the held diaries were destroyed, but also the correspondence of repressed archaeologists. It is wrong to claim that archaeologists in the USSR completely stopped communicating with foreign colleagues and were not interested in foreign publications and foreign archival funds. But this scientific communication was of “shaded” and secret character. It is impossible to restore the disturbed dialogue of Russian and West-European archaeologists without the employees of archives and funds of European countries. Thus, the restoration of the lost archived information is possible only through international cooperation.
Th6-07

FORUM MEDIEVAL ARCHAEOLOGY IN EUROPE AND LITHUANIA

Friday, 2 September 2016, 09:00-16:00
Faculty of Philology, Room 13
Author - Tys, Dritas, Vrije Universiteit Brussel, Brussels, Belgium (Presenting author)
Co-author(s) - Fosley, Salli, University of Stirling, Stirling, United Kingdom
Co-author(s) - Hansen, Gitte, University of Bergen, Bergen, Norway
Co-author(s) - Predovinik, Katarina, University of Ljubljana, Ljubljana, Slovenia

Keywords: Europe, Lithuania, Medieval Archaeology
Presentation Preference - Committee / Working Party meeting

The Forum of MERC (Medieval Europe Research Committee) is an annual meeting held at EAA to promote active archaeological research in the medieval period (AD400-1600) in every country in Europe. It is the intellectual successor to the series entitled Medieval Europe inaugurated at York in 1992, and staged at Bruges in 1997, Basel in 2002 and Paris in 2007. A change of direction occurred in 2012 when new thinking suggested that medieval archaeology would develop more powerfully within the broader ambit of prehistoric and historic archaeology as a whole. Accordingly the representatives of the conference accepted an invitation from EAA to merge the two conferences. This duty occurred at Helsinki and has continued since then. The medieval agenda is promoted by MERC, which views itself as in academic partnership with EAA. The purpose of the forum is to:

- highlight the performance of medieval archaeology in the host country
- highlight the medieval and medieval-related sessions at the conference
- table new research themes pertaining to Europe with special emphasis on links with prehistory
- debate new initiatives for teaching, publication and publicity for the subject.

The discussions aim to connect medieval archaeologists working in the academic, government and commercial sectors and to encourage students to research the period by attending the EAA conference and our Forum. In addition to invited speakers and speakers from the floor, the Round Table will be hosted by Dr. Dritas Tys, Dr. Gitte Hansen, Dr. Salli Fosley and Dr. Katarina Predovinik.

Keynote Speakers:

- Lithuanian medieval archaeology, Prof. Kuncenius, Abinas (Vilnius University, Lithuania)
- Early medieval horse cemeteries of Prussia and Central Lithuania on a comparative scale, Dr. Shirokikhov, Roman (Moscow State University, Russia)
- Cultural resilience and adaptation at the frontier: Klaipeda and Zarde pottery analysis, PhD student Ubis, Edvinas (Klaipeda University, Lithuania)
- Future archaeologies of the “Great Wilderness”: Crusading, depopulation and colonisation in the frontiers of Lithuania, Dr. Plusiwski, Aleks (University of Reading, United Kingdom)

Th6-08

RESOURCE: CONDUIT, AGENT AND WATER AND THE DEVELOPMENT OF THE HUMAN GEOGRAPHY OF CENTRAL ASIA

Thursday, 1 September 2016, 09:00-11:00
Faculty of Philology, Room A7
Author - Markofsky, Steven, Universitat Pompeu Fabra, Barcelona, Spain (Presenting author)
Co-author(s) - Holguin, Leah, University of Southampton, Southampton, United Kingdom

Keywords: Central Asia, hydrosocial dynamics, water
Presentation Preference - Regular session

Since the end of the Cold War, Central Asia has seen a burgeoning of research agendas, many addressing hydrosocial dynamics. The environmental and geographical challenges of the region, where vast desert regions and semi-arid steppe environments have been subjected to extensive agro-economic and pastoral pressures, have focused international attention on the fragile essential balance between societies and water resources.

Somewhat lost in the drive to understand these relationships is the context of modern-day concerns such as climate change, sustainability and resource management. In the historical trajectories of these human/water relationships, not only with respect to the better-studied river systems and delta environments, but also with respect to smaller or less accessible water resources such as pools, ephemeral lakes or aquifers. In Central Asia, a region characterized historically by movement, exchange and communication across vast desert regions, the indispensable role of such hydrological features becomes increasingly clear: not simply as static resources, but as natural assets in the facilitation of movement and interaction. Even today, the identification, exploitation and management of these various resources remains central to understanding human/landscape transformation, and their co-evolutionary role in water landscapes of human geography.

This session aims to broaden our understanding of water as resource, conduit and agent in the development of societies and landscapes across Central Asia. We welcome papers that present new theoretical and methodological approaches to understanding and interpreting hydrosocial dynamics. These may include remote sensing, bio/archaeology, simulation or papers that emphasize the social aspect of hydrology, including ethnoarchaeology or research that considers water as heritage in Central Asia. We feel that this creative approach to water research in Central Asia will be beneficial to regional researchers and to a wider audience in seeking to broaden the scope of hydrosocial research in Central Asia more generally.

Th6-08 Abstract 01

The Hydrosocial Margin: Settlement, Socio-ecology and Sustainability in the Central Asian Desert-Deltas

Author - Markofsky, Steven, Universitat Pompeu Fabra, Chestnut Hill, MA, United States of America (Presenting author)
Keywords: Central Asia, hydrology, landscape archaeology
Presentation Preference - Oral

Over the past several decades, there have been a number of developments that have changed our fundamental understanding of the changing relationships between societies and water resources, particularly at the local level. These new understandings have particular import in arid-margin ecotones, where scarce or unreliable water resources underscore a natural fragility in the socio-ecological balance. In transitional regions, such as oases and delta-desert boundary zones, small-scale or local changes in the interaction between people and water may bear significantly on broader-scale issues of human/landscape co-evolution and, vice versa, this paper will explore, via a multi-proxy approach that integrates geochronology, remote sensing and survey data, new ways of conceptualizing the social and political economy of human-water systems in Central Asia. We feel that this creative approach to water research in Central Asia will be beneficial to regional researchers and to a wider audience in seeking to broaden the scope of hydrosocial research in Central Asia more generally.

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TH6-08 Abstract 02

Preliminary results of the paleochannels network of Margiana on the basis of remote sensing analysis

Author - Arciero, Roberto, Leiden University, Leiden, Netherlands (Presenting author)
Keywords: Central Asia Archaeology, Remote Sensing, Water Management
Presentation Preference - Oral

Water resources have played an important role in the formation and development of all societies across millennia. Turkmenistan has been a desert territory since the end of the Bronze Age, and water availability has always been an issue. During the transition between the Bronze and Early Iron Age the Murghab desert area was characterized by a complex phenomenon of urbanization, and was influenced by an important interaction between mobile pastoralists and farmers. Taking into account the high importance of water resources for the agricultural communities, and considering that pastoralist sites were close to the sedentary sites, little is known about the water management of micro-scale areas. Undoubtedly the disappearance of the largest sites at the end of the Middle Bronze Age (2400-1500 BCE) and the southwards shift of the barycenter of the settlements at the end of the Late Bronze Age (1500-1000 BCE) were strongly connected to water management. Despite the analysis of the ancient Murghab alluvial fan on a macro-scale area, data coming from micro areas showing the ancient hydraulic network are relatively scarce. This paper presents the first results of the preliminary remote sensing analysis conducted on the basis of satellite imagery, aerial photos and cartographic maps for the sedentary sites area of Togolok 1, Adj Kui 1 and the nomadic site area of Site 1211-1219 and Ojakly. The aim is to analyze the different water management strategies of both sedentary and nomadic settlements and their possible interaction.

TH6-08 Abstract 03

The water management in the Iron Age and landscape taphonomy of the Serakhs oasis (Turkmenistan)

Author - MA Bulska, Nazarij, Institute of Archaeology, University of Warsaw, Warsaw, Poland (Presenting author)
Keywords: Iron Age, Serakhs oasis, Central Asia, Water Management, landscape taphonomy
Presentation Preference - Oral

The Serakhs oasis, located in southern Turkmenistan near border with Iran and Afghanistan, is a subject of study of the Polish-Turkmen Archaeological Mission headed by prof. Barbara Kaim since 1995. Due to field surveys conducted here since 2007 above 170 sites of different periods were discovered, which enabled the study of oldest settlement pattern and the water management system in particular periods. The best recognized oldest settlement pattern currently is the Iron Age (Yaz culture).

Above 700 sites with the characteristic pottery of Yaz I-II periods (circa 1400-330 BC) have been discovered in Central Asia, north-eastern Iran and Afghanistan by various studies carried on since the beginning of the XXI century. Many of the sites were connected with Achaemenid Empire, while large extent of settlement along with associated canals were used as proof to existence of large scale irrigation networks in Central Asia.

The water management system of the Serakhs oasis is one of the most important subjects of study of the mission. The recent approach is based on the deeper analysis of the context of the sites with use of Geographic Information System Environment. The ArcGIS database, which gathers satellite imagery, digital elevation data, topographic maps, the vector data related to hydrology, ancient and recent occupation are used as a tool to discuss many questions related to settlement pattern of the oasis.

The analysis of mentioned data, presented in the paper, makes it possible to investigate the water management system in Yaz periods in the Serakhs oasis. Here the topographic maps, high-resolution satellite imagery made in different periods of time and SRTM derived elevens are used followed by deep analysis of landscape taphonomy of Serakhs oasis. The paper concentrates on the water management in the Yaz I-II periods, which is especially important for understanding how water management changed in comparison to the later periods. The future areas of study are also indicated.

TH6-08 Abstract 04

Examining Holocene Socio-Hydro Landscapes in the Gobi Desert, Mongolia

Author - Holguin, Leah, University of Southampton, Southampton, United Kingdom (Presenting author)
Keywords: Holocene desert hydrology, Human-Environment Interactions, Mongolian Neolithic
Presentation Preference - Oral

Archaeologically traditionally views social progression as a linear trajectory, where hunting and gathering and nomadic pastoralism are stepping stones to sedentary lifestyles and agriculture. The Mongolian Neolithic (3000-2000 B.C.E.) contradicts this dominant narrative, especially in the South Gobi Desert where there is evidence of sedentary communities who utilized pottery, mortars, and pestles. Some researchers argue these were hunter-gatherers foraging in the area. At some point during the Bronze Age (3500-1700 B.C.E.), nomadic pastoralism was adopted as the dominant subsistence strategy and these sedentary communities were abandoned. This unexpected reversion may have been related to profound environmental changes occurring at this time and further examining this may help us to understand how human societies adapt to changing levels of uncertainty about resource availability. This will be examined through the changing Holocene landscape dynamics across the Ulan Nuur paleo lake and paleo hydrological system located in the Gobi Desert of Omnogovi province, Mongolia. By examining this Holocene socio-ecological landscape, it may provide clues to how the changing hydrological system may have influenced resource availability, which in turn, may have affected local subsistence strategy choices.

TH6-08 Abstract 05

The archaeology of water management in context of west Khorsan, Tapeh Damghani, Sabzevar city

Author - Garahzian, Omar, Neyshabour, Iran (Presenting author)
Keywords: Bronze Age excavation, northeast Iran water resources
Presentation Preference - Oral

Located on the edge of an alluvial fan near Sabzevar city in Iran, Tapeh Damghani is an archaeological site containing late Chalcolithic and early Bronze Age evidence. The surveyed site is 100 hectares, and excavations were conducted on the 6-hectare core of the site, at the end of the slope towards the Kal Shur river. The excavation was conducted over two seasons during the second season, the excavation concentrated on four workshops. The northern ones, workshop II and III, revealed a series of brick walls. These walls were buried under two meters of natural deposits caused by floods from the 2nd millennium BC, leading to excellent preservation. The context and architectural construction suggest that these walls are the remains of water resource management structures: preliminary dams for controlling river flooding, obtaining surface water, and redirecting water to canals.

This research will examine evidence from Workshop II and III of Tapeh Damghani in the context of site location, landscape and environment that suggest adaptive methods of water control.

The excavations are supported by the City Museum of Sabzevar, which is planning to develop an open-site museum by the Tehran-Mashhad highway.

TH6-08 Abstract 06

The Spread of Fruits along the Silk Road

Author - Dr. Spengler, Robert, Washington University in St. Louis, Lancaster, United States of America (Presenting author)
Co-author(s) - Dr. Frachetti, Michael, Washington University in St. Louis, Lancaster, United States of America
Keywords: Agricultural Spread, Archaeobotany, Silk Road
Presentation Preference - Oral

The Great Silk Road was the largest commerce network of the ancient world; it linked the disparate ends of the vast Eurasian supercontinent and in doing so connected the imperial centers of East and southwest Asia. While organized trade, including military outposts and government taxation, along the Silk Road dates back to the Han Dynasty (206 BC–AD 220); the exchange of goods, ideas, cultural practice, and genes, through the thousands of kilometers of desert and mountainous expanses comprising this region dates back to the third millennium BC. Over the past two millennia, the ebb and flow of cultures directly shaped the trajectory of human history in myriad ways, including by spreading agricultural practices and crop varieties. Among the many goods that moved along the Silk Road were a wide variety of plants, including many of the fruits that are familiar to us today. Archaeobotanical research at the Tashbulak archaeological site (ca. A.D. 900–1200) is illustrating the importance of many of these crops in Central Asia during the height of Silk Road exchange, during and shortly after the Tang Dynasty (A.D. 618–907). The site was occupied by people in the Karakhanid Khazan (A.D. 840–1212) and was likely a high- elevation mining town. Preserved plant remains near the central square of the ancient occupation site paint a picture of the types of fruits and grains available in markets along the Silk Road. Archaeobotanically tracing the path that plants followed on their long journey across Central Asia, provides us with a map laying out the early routes these foods took to ultimately reach our dinner plates today.
TH6-09

SOCIAL AND GENDER COMPLEXITY THROUGH THE ARCHAEOLOGICAL REMAINS IN HOME HOUSING

Thursday, 1 September 2016, 11:30-13:00
Faculty of Philology, Room A7

Author - Grass, Francesco, University of the Basque Country, Vitoria Gasteiz, Spain (Presenting author)
Co-author(s) - Grelet, Enrico, Ludwig Maximilian Universität, Munich, Germany
Keywords: artifacts and community, domestic contexts, social complexity
Presentation Preference - Regular session

The main objective of this session is the study of Social and gender complexity through the archaeological remains in home housing, using a comparative approach on the basis of archaeological data.

The main focus will be on: household artifacts in domestic context (presented in categories of pottery, glass, metal, wood). We can assume that the typology of household artifacts had a direct relationship with social framework of communities and with the formation and the existence of local powers. The archaeological research on ancient communities has recently increased in Europe in terms of quantity and quality, and some studies have attempted to connect all these types of artifacts found into domestic context, producing some excellent summarising results for individual sites or local territorial contexts.

Particularly we would compare how the relations between domestic artifact had been interpreted in the key of reconstruct the complexity of ancients societies, the formation of elites and their recognisability, in terms of a broad range of chronology and geography too. The session will explore the potentiality and the limits of our records and our approaches to face social and gender inequality in ancient communities, trying to suggest general considerations that can be useful for the study of many spaces and chronologies.

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TH6-09 Abstract 01

STUDIES ON REMAINS OF DAILY ACTIVITIES FROM THE LBK NEOLITHIC SETTLEMENT

Author - Michalak, Katarzyna, University of Gdańsk, Gdańsk, Poland (Presenting author)
Co-author(s) - Potęga, Łukasz, University of Gdańsk, Gdańsk, Poland
Keywords: activity zones, processing of food, social relations
Presentation Preference - Oral

This paper focuses on aspects of identification of activity zones around LBK longhouses discovered at the multi-phase Neolithic settlements in southern Poland.

Studies on the spatial and functional diversity of features located around the longhouses as well as quality (a state of preservation) and quantity of artifacts found there (pottery, finds, fragments of stone tools and grain remains) allow us to distinguish two main types of activity zones interpreted as possible places of household activities and intense deposition of waste, and places associated with processing and/or storing of food. Indication of these domestic/kitchen zones that have been used to daily activities and have been probably shared by inhabitants of contemporary houses enable deeper insight into social patterns and complexity of social relations. The recognition of domestic area related to processing of food seems to be also especially important to further studies on gender relations.

Another aspect of the study is to emphasize a possible limitation of recognition of activity zones because of long-term preservation and the overlapping of various activity zones that can be problematic during analysis of the domestic artifacts recorded at the multi-phase settlements.

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TH6-09 Abstract 02

TELL ME WHO IS LIVING HERE... SOME CONSIDERATIONS ON PEOPLE LIVING IN CONCISE, A SWISS NEOLITHIC SITE

Author - Post doctorale Chéquet, Patricia, Musée d'histoire naturelle, Geneva, Switzerland (Presenting author)
Co-author(s) - Burki-Wyser, Elena, Etat de Vaud, Sipal, Archéologie cantonale, Lausanne, Switzerland
Co-author(s) - Wringer, Ariane, Etat de Vaud, Sipal, Archéologie cantonale, Lausanne, Switzerland
Keywords: lake dwelling, Neolithic, session, tasks sharing
Presentation Preference - Oral

Studies of the Middle Neolithic lake dwelling of Concise (Switzerland) are expanding year by year, with more fine assumptions about the spatial structures of the villages, the identity of the actors of the material culture, the history of the populations... The architecture of some villages is known as well as the material culture which contains in some cases a mixture of components NMB from Franche-Comté and the Swiss Plateau Cortaillod. The spatial distribution of remains between activity areas common to several houses and domestic waste in each house shows an essentially domestic economy, but there are also synergies by groups of houses for some components. The analysis of these distributions has led us to propose a gendered tasks sharing. In this general atmosphere of domestic subsistence, two buildings appear to have a particular function.

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TH6-09 Abstract 03

TRACES OF HOUSEHOLDS, ACTIVITY AREAS AND SOCIAL INEQUALITY IN A LATE COPPER AGE SITE IN HUNGARY

Author - PhD Földi, Szilvia, Hungarian National Museum, Budapest, Hungary (Presenting author)
Co-author(s) - Sári, Gabo, Research Centre for Humanities of HAS Institute of Archaeology, Budapest, Hungary
Keywords: activity areas, household unit, social inequality
Presentation Preference - Oral

The archaeological traces of households and household units as the scenes of community interaction form an important interpretative level, determining numerous characteristics of the life and material culture of the community. My research is based on the premise that the archaeological identification of households and activity areas is possible, since the basic activities of everyday life were carried out in a delimited area and within a delimited timeframe. In my work I made an attempt to define the spatial and temporal limits of households and thus to determine the remains of which activities within a household have been preserved. The interpretation and comparison of these hypothetical households as units and scenes of social and gender inequality was carried out from a variety of standpoints: among others from that of consumption, specialization and diversity. The starting point of the research is provided by the finds and observations on setting settlement structure made during the excavations at a Copper Age site.

The study of the site is complemented by natural scientific – archaeological, anthropological, petrographic, geochemical, and radiocarbon dating – analyses, and environmental archaeological data from the region Transdanubia in Hungary. The proceeding of the finds was followed by the detailed qualitative and quantitative analysis of the materials of the pits and the pits themselves (correspondence analysis, one-way correlation analysis) according to the observed groupings. With the help of the spatial statistical and GIS analysis of the finds, the mapping of the distribution of the finds enabled the quantitative and qualitative study of the various classes of finds, which could help us to shed light on the distribution of activities and traces of social inequality taking place within and outside the households.

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TH6-09 Abstract 04

CULTURE AND SOCIETY OF A HELLENISTIC SITE: HOUSES AND ARTIFACTS OF SCILIAN CITY OF FINZIADÉ

Author - Researcher Toscano Raffa, Alessio, CNR-IBAM Catania, Messina, Italy (Presenting author)
Keywords: Hellenistic world, houses, Sicily
Presentation Preference - Oral

The contribution is about housing of the Hellenistic-Roman period of Finziade, in the province of Agrigento, on the southern coast of Sicily.

There are 12 houses systematically excavated by the University of Messina between 2003 and 2014 that constitute a very large sample relative to the daily life of a center of Hellenistic-Roman Sicily, perfectly integrated with Mediterranean examples of the period in southern Italy, Sicily, Greece, and in the coasts of Africa and Asia minor.

All houses have a square plan with a central courtyard that represented the center of domestic life and was equipped with tank for collecting rainwater. Around it revolved every room of the house, including the dining rooms, bedrooms, bathrooms and kitchens.

Themes will therefore be treated associated with daily life, especially in relation to material culture. Some kitchens, for example, are well accessorized with holes, tables and docks as well as the functional ceramic sets to the preparation, the service and food consumption. The most important rooms of the houses have also returned the wall decorations and floor of great value, which are an indicator of the medium-high socio-economic conditions of the owners.

Particular attention will be devoted to domestic cults, in fact every house possessed an environment characterized by the presence of an altar complete with artifacts relevant to the performance of rituals, demonstrating a particularly common practice.
in domestic contexts of the Mediterranean in the Hellenistic period, as demonstrated by the cases of Segesta, Eraclea Minoa, Tindari, Delio, Kerkoiana. The altars, as well as the architectural decorations and ceramics documentation from the houses, show different economic realities between the houses excavated. Further aim of the contribution will evaluate individual aspects of different spaces in the houses, analyzed in a contextual way to make a picture of the social reality of downtown Finziade in relation to the characteristics of the late Hellenistic scene of Mediterranean, reflected by the artefacts from private contexts.

TH6-09 Abstract 05
Women to the front! Women to the front?

Author - Bauer, Anna, Wien, Austria (Presenting author)
Keywords: female soldiers, Gender, woman and war
Presentation Preference - Oral

We have found women burials that can be dated to the early middle ages. Surprisingly these burials don't show the typical grave goods for women like pottery or jewellery instead weapons were found. The archaeological research has difficulties to accept these burials as women tomb because the grave goods are typical for man ones. The anthropologist results were ignored and the female skeletons were declared to declare males. Supporting their decision by saying that during the early Middle Ages the social gender is not like the biological gender. Anyway, women with weapons are not known just for the early middle ages but also in the 5-3 Century BC. in the Asiatic/Russian area.

In general women had no access to political or social power so the stereotyped of the peaceful woman was founded. If a woman fought she had still to fulfill the stereotyped of womanhood. Men were shocked when they found out that they have fought against women. The reasons why a woman joined war are various: poverty, a bad childhood, desire for adventures or a problem with their natural gender. With the beginning 21st century emancipation was another reason why women turned into army service. At the first World War it was emancipation which brought women to the army. When war was nearly over women had to leave the army and be again a housewife and mother. Their performance at war was not remembered and the women where left alone with their troubles and trauma.

An indirect reason why a young woman might have joined the army could be found in the higher wergeld for female babies. In the early Middle Ages 2400 solidi were paid for a baby girl and 600 solidi for a baby boy from this forced marriage can be deviated their troubles and trauma.

The grap for the weapon must have been for some women or girls the exit from a forced marriage.

TH6-10 Abstract 01
Anthropology of iron craft in the Canigou mountain (Antiquity-Early Middle Ages)

Author - Dr. Vaschalde, Christophe, ISEM UMR 5554/LAMU 7298, Montpellier, France (Presenting author)
Keywords: Anthropology, Fuel, Iron metallurgy
Presentation Preference - Oral

During ancient and medieval times, iron ore from the Canigou mountain (Pyrénées-Orientales, France) was intensively exploited, transformed into metallic iron and traded. This exploitation was particularly important between the end of the 3rd c. B.C. and the beginning of the 1st c. A.D. Although decreased, this activity continued during the late Antiquity and the Early Middle Ages. In the Canigou mountain, and more generally in the whole eastern Pyrénées, archaeological and anthropological researches allowed to realize first synthesis on the relation between charcoal burning and metallurgy, but mostly for the modern period. However, anthropological research on ancient and medieval metallurgical iron remained scarce, probably because of the lack of studied sites for this period. Since 2014, a new interdisciplinary and diachronic research project aims to study Canigou mountain’s iron industry and trade. In 2015, archaeological surveys were realized in the valley of the Lentill (Canigou mountain) in four rejects from iron ore reduction, dated from the Vth to the Xvth c. AD. The first anthropological results led on these surveys provide information on fuel management and on the type of landscapes exploited in this region during the late Antiquity and the Early Middle Ages. At the end of Antiquity, landscapes located between 500 and 1200 m a.s.l. were mostly dominated by the deciduous oak forest, which tended to become a beech forest and a sessile pine forest in altitude. Around 500 m, open landscapes (scrubland) and/or sclerophyllous mixed oak forest might have existed. The presence of some species (Erbus sempervirens, Enca, Leguminosae) might have been related to anthropic activities (pastoralism?). Both the anthropological spectra dominated by the deciduous oak forest and the big caliber of the charcoals identified raise the question of the relation between charcoal burning and iron metallurgy. Furthermore, one of the four sites revealed a broader diversity and the use of smaller calibers, suggesting the use of the charcoal for the roasting of the iron ore and not for its reduction. At last, some of the charcoals show signs of tool marks, testifying of the cutting process. In order to better understand the impact of metallurgical activities on landscapes, future studies...
The influence of the Mosul copper and alloy industry, in particular brass production during Middle Age Western Europe, is an irrefutable historiographic fact. Cauldrons, bowls, and pans produced in the town of Dinant as well as in the nearby Bouvignes, were exported throughout French and English kingdoms, as far as Barcelona in Spain. In the 15th century, copper alloy artifacts produced in the Dinant region were so highly prized and considered that the town’s name of Dinant was used in Paris to designate the boilermakers, or the dinandiers (coppersmith).

Co-author(s) - Plumer, Jean, Service de l’Archéologie, Service Public de Wallonie (SPW), Namur, Belgium
Keywords: Belgium, Brass blacksmith, wood charcoal
Presentation Preference - Oral

TH6-10 Abstract 04
Fuel Selection and Forest Management by Middle Age Belgian Brass Blacksmiths Along the Meuse River

Author - Dr. Chevalier, Alexandre, Royal Belgian Institute of Natural Sciences, Brussels, Belgium (Presenting author)
Co-author(s) - Thomas, Nicolas, Laboratoire de médiévistique occidentale de Paris – Université Paris 1, Paris, France
Co-author(s) - Verbeek, Marie, Service de l’Archéologie, Service Public de Wallonie (SPW), Namur, Belgium
Keywords: Medieval, Belgium, Brass blacksmiths, wood charcoal
Presentation Preference - Oral

During Historical times, fire was one of the main energy used for industry, craft and domestic activities. For the past 30 years, anthracological analyses were realized in Mediterranean France on nearly 80 ancient, medieval and modern sites. If several informations were provided by the documentary sources of the time, the aim of this paper is to analyze the use of this natural resource in Hispanic metallurgy, to know the types of existing charcoal, to examine the works they were designed to and to give some trends about commercialization in the 14th and 15th centuries.

TH6-10 Abstract 03
Synthesis of the anthropological approach

Author - Dr. Vaschalde, Christophe, ISEM UMR 5554/LA3M UMR 7298, Montpellier, France (Presenting author)
Co-author(s) - Cordoba de la Llave, Ricardo, University of Córdoba, Córdoba, Spain
Keywords: Anthracology, Craft, Fuel
Presentation Preference - Oral

Due to late Middle Ages in the north of France

Author - Crouzevialle, Rémi, GEOLAB UMR 6042CNRS, Limoges, France
Co-author(s) - Rouaud, Romain, GEOLAB UMR 6042CNRS, Limoges, France
Co-author(s) - Dr. Paradis-Grenouillet, Sandrine, Eveha, Condat sur Vienne, France (Presenting author)
Keywords: Fuel consumption, Limousin, Woodland
Presentation Preference - Oral
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 other 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 can be found in reports about other important monuments such as the settlements of Kunda and Tamula. Is it possible for us to rely on results of excavations conducted 50 and more years ago, and prove that these archaeological monuments contain evidence 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

Author - Charniauxski, Maxim, Institute of History NAS of Belarus, Minsk, the Republic of Belarus (Presenting author)

Keywords - Kryvina peat-bog region, Late Neolithic - Bronze Age, Northern Belarus (Lakes region)

Presentation Preference - Oral

Kryvina peat-bog is an archaeological microregion located in Vitebsk region of the Republic of Belarus (south of Belarussian 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 area 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 Krynina 1, Aasavice 2 and Aasavice 7. Settlements. Since 2018, the Aasavice 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 Charniauxski and Maxim Charniauxski. 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 the North-Belarusian culture in the region.

**TH6-11 Abstract 04**

Landscape and natural resources use in the 3rd mill BC by pile-settlements' dwellers in NW Russia

Author - Mazurkiewich, Andray, the State Hermitage Museum, Saint-Petersburg, Russian Federation

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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) moraine plateaus with predominantly clayey soils covered by broad-leaved trees; 3) glacial 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. The long duration of pile dwellings in one place.

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 toolskits 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 Vologda in the Sukhona basin, the site is located by 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 culture, typological and economic developments and their links to environmental history over eight millennia. A multidisciplinary Russian-German field project led by Vologda 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-logging. 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 3000 BC. 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.

During the field work in 2015, a test trench was excavated within the pile concentration, yielding for the first time information on the stratigraphic association of the timber constructions. Silty and multiple layered sediments rich in organic remains point to the exploitation of aquatic plant resources in the Stone Age. Important new insights come from a pollen core, the first in this region, which shows several phases of intensified human activity at Veksa over the millennia that are correlated to phases of increased siltation and drying-up of the environment. Ongoing analyses of the documented features and the environmental data will yield new information on the character and function of the wooden constructions and their association with cultural, economic and environmental developments.

**TH6-11 Abstract 06**

The Neolithic and Early Metal Age wooden construction of site Okhta 1 in St. Petersburg (Russia)

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Keywords: Neolithic sites, Early Metal Age, wooden construct

Presentation Preference - Oral

The Neolithic sites Okhta 1 is first archaeological object with gut preserved wooden construction in St. Petersburg region. The territory of sites was occupied by ancient people several times during the Neolithic Age – in the Early Metal Age periods – from 4000 to 2500 BC. The cultural layers of the prehistoric settlements are situated under alluvial sandy sediments – 1.1 m thick, which lie under the buried soil of the Middle Ages. Features of the microrelief of the site, its stratigraphy and archaeological observations allowed us to select an earlier coastal fishing zone located on the coast of the gulf, and a second fishing and living area, connected to river channels. The archaeological collection includes archaeological finds: pottery, stone tools, products of organic matter and wood, and amber jewelry.
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.

Wood architecture in the Early Neolithic (5300-5000 cal BC) site of La Draga (NE of Iberia)

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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. All this process is usually hidden for archaeologists, but its economic and social implications are of great relevance. The analysis 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 result of the analyses of the architectural elements. We’ll 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.

TH6-11 Abstract 09
Dry land and lakeside settlements in the site of Four Lakes at Amindeon Basin (Greece)

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Keywords: Western Macedonia

Presentation Preference: Oral

The surveys and excavations of the last years in Amindeon region conducted by Florina Ephorate of Antiquities, resulted in the discovery of several prehistoric dry land and lakeside settlements dated from the late 7th to the late 2nd mil. BC. Some 31 new habitations were spotted in an overall area of 550 hectares, from which 15 sites were partially or totally excavated, covering an area of 25 hectares. From the preliminary overall approach of the excavational data so far yielded, the development of a unique culture in the region is documented, with an active contribution - especially during the earlier phases - to the neolithisation of Balkans, as part of the basic axis of populations and ideas mobility from the southeastern Balkans toward central and northern Europe. The location of the settlements confirms the special relationship that local neolithic communities developed with wetland-environment, an interaction sustained with an impressive adaptive trajectory throughout prehistory. Even during Early and Middle Neolithic periods (mid 7th - mid 6th mil. B.C.) - as documented by the excavational data from the settlements Anargiri XI and Anargiri XIII and XIX - although some basic choices regarding the construction and organization of habitation’s space refer to dry land occupation - the proximity of those settlements to the adjacent marshes necessitate the adaption of building techniques similar to pile dwellings. At late 6th mil. B.C. the occupation of the lakes and marshes’ shores is intensified, resulting the establishment of several lakeside settlements. The most recent partial or total excavation of some of these and the investigation of extended destruction layers, numerous structural elements and artifacts of various organic materials, yielded new data to the prehistorical research of the region. The preliminary study of the evidence from the lowest waterlogged layer of Limnokhori II, Anargiri XIX and XIX refer to dwellings built on water or by the shores, with a wide range of construction techniques exploited for flooding, waiting, roofing etc. Especially the on-going large scale rescue excavation at Anargiri XIX has so far yielded some impressive wooden structures referring to an organized communication and or defense system of palisades and trackways connecting the settlement to the opposite lakeshore. All these significant evidence referring to the diachronic intra-settlement spatial organization, the form, structure and internal arrangement of the houses, together with thousands of clay, stone, wooden tools related to the productive, meat consumption and domestic activities, as well as some unique artifacts and ornaments related to the variety of ideologic means of expression and orientations of the local prehistoric communities, formulate a unique data set for the research of pile dwellings in Southeastern Europe and beyond.

TH6-11 Abstract 10
Ups and downs. Studying structural wood from the prehistoric lakeside dwelling Anargiri IXB (Greece)

Author: PhD Candidate Giagkoulis, Tryfon, University of Bern, Florina, Greece (Presenting author)

Keywords: Architecture, structural wood, Prehistoric lakeside dwelling Anargiri IXB, Western Macedonia, Greece

Presentation Preference: Oral

The Rescue Excavations Project of Florina’s Ephorate of Antiquities at the caiminzing zone of Public Power Corporation S.A. – Hettas (Amindeon, Western Macedonia, Greece) has so far yielded substantial new evidence for the cultural development - from Early Neolithic to Late Bronze Age - of this region characterized by the presence of four lakes. Among the numerous finds there are a considerable great number of wooden elements belonging to structures preserved in the lower waterslogged deposits of several prehistoric settlements. Anargiri IXB is a settlement inhabited since the early 5th millennium BC, was oval in shape and approximately 2.8 hectares in size, in the central part of which the archaeological layers are almost 4 m thick. According to the so far uncovered excavational evidence, the earliest occupation’s structures were built in immediate spatial relation to water with matching building choices adopted by the Neolithic settlers, while during the subsequent Neolithic periods (c. 4700-3300/3200 BC) the settlement became a dried site characterized by successive layers of burnt structures. The large scale project of the last three years has resulted the completion of the excavational research of the cultural deposits at the periphery of the settlement, covering an area of approximately 7,000 m².

The study of the various construction techniques implemented by the neolithic builders, especially concerning the exploitation of wood as raw material in several related tasks, is based mainly on extensive sampling of the structural elements preserved in the settlement’s waterlogged layers, as well as on the data set derived from the detailed documentation of finds and findings and their spatial integration in the excavational grid with the use of GIS tools. Although the study is still in an early stage, the interpretation of data and the processing of data from the categorization of the wooden elements in different types according to their preservation, in-layer arrangement, physical and technical features etc. provide useful information concerning the construction and organization of space at the periphery of the prehistoric occupation. Yet, the large scale of the excavation, some particular differentiations in...
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 4th century BC. The outcomes of recent archaeological and palynological prospections suggest new settlement sites and human impact dating back to the 5th millennium (see contribution of Mainberger, this session). Within the tri-national project ‘Beyond Lake Villages – BELAVI’ palaeoecological on-site and off-site data from the Western Allgäu region are synthesised with archaeological records. The chronological basis and with it the relation to regional and over-regional vegetation and climatic records is established by high-resolution pollen, charcoal and sedimentary 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 response 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 falls. Wood charcoals 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 charcoals 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, Gosta, 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 outcrop 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 modestly 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 elemental information on the material culture and chronology of these sites and indicated the density of settlements established on lake shores, river beds and lakes within marshes. Pile dwellings were common characteristic of many Neolithic villages on the shores of Lake Ohrid, Lake Prespa and Lake Ohjan, but recent research done in 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:** Todorska, Valentina, N.J. 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. Movable archaeological 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 Allgäu – first results of the BELAVI project**

**Author:** Dr. Wick, Lucia, Landesamt für Denkmalpflege, RP Stuttgart, Gaienhofen-Hemmenhofen, Germany (Presenting author)

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**Keywords:** human impact, Neolithic land use, subsistence

**Presentation Preference:** Oral

The preliminary remarks presented in this paper refer to specific clusters of wooden elements (vertical and horizontal piles, planks etc), which due to their similar characteristics, spatial and starigraphical distribution can be correlated to structures built at the edge of the main habitational setement’s area. The specific building processes followed, the original form, as well as the possible function of these structures are some of the future research topics. Furthermore, the microscopic examination of the wooden elements sampled so far, as well as the expansion and intensification of the sampling processes at the forthcoming excavational campaigns, not only will add crucial and qualitative information regarding the use of wood as construction material, but will possibly open new perspectives for palaeoenvironmental research and - most importantly - dendrochronology in Ammonia basin.

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**TH6-11 Abstract 14**

**The Neolithic Landscape of Westallgäu region – first results of BELAVI in Southern Germany**

**Author:** Dr. Mainberger, Martin, Landesamt f. Denkmalpflege Baden-Württemberg, Staufen, Germany (Presenting author)

**Keywords:** Cultural landscape vs Aquatic landscape, lake shore settlements, Neolithic

**Presentation Preference:** Oral

Precisely dated, laminated lake sediments contain an amazing wealth of archaeological background data. If their palaeoenvironmental, palaeo-economic and palaeoecological information can be exactly paralleled to waterlogged archaeological evidence from lake shore sites, a dataset on human activities in landscapes far beyond the lake shores is generated. This is the core outcome of a research project completed in 2010, focusing on the small Degersee Lake in South Western Germany. The Degersee project triggered not only a whole series of new discoveries, but also the design of the tri-national research project „Beyond Lake Villages – Project (BELAVI), which started in 2015. The German working – group focuses on the Stone Age of Western Allgäu, a pre-alpine region between Lake Constance and the European Watershed between Rhine and Danube River systems. Topographic and hydrographic maps illustrate that in the Holocene the landscape was characterized by woodlands growing up on drumlin rows and moraine belts, and an entanglement of lakes, bogs, lowlands and water courses. The archaeological assessment of the Western Allgäu region is based on a concept of complementary components, with the cultural landscape dominated by farming activities on one hand, and the aquatic landscape with their benefits in respect to foraging, settlement-building, and communication on the other. The presentation will provide with initial results of the GIS - supported landscape analysis and first outcomes of 2015 and 2016 field campaigns.

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**TH6-11 Abstract 15**

**Beyond Lake Villages in the Neolithic of Austria**

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**Presentation Preference:** Oral

Austria’s prehistoric lake village sites have been known for over 150 years. Research in the 19th and 20th century identified a number of prehistoric lacustrine structures, with rich cultural deposits. But research into Austria’s Plathbau (pile-dwelling) phenomenon has been characterized by discontinuity and modern transdisciplinary research has been limited in practice and at a theoretical level. This has been changed with several new research initiatives focussed on the Sanktquarmergut region in Upper Austria. This paper presents data analysis from the international project „Beyond Lake Villages“ (funded by FWF-DFG-SNF 2015-2018). The Austrian part of the project focuses on the Lake Attersee-Mondsee region, including both large and small bodies of water, bogs, and newly discovered ‘hinterland’ sites. The aim is to characterize lake and off-site data from the Western Allgäu region are synthesised with archaeological records. The chronological basis and with it the relation to regional and over-regional vegetation and climatic records is established by high-resolution pollen, charcoal and sedimentary 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 response 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 falls. Wood charcoals 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 charcoals 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 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.

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

Author - Ruegsegger, Hans, Naturhistorisches Museum Wien, Vienna, Austria (Presenting author)

Co-author(s) - Kowarik, Kerstin, Naturhistorisches Museum Wien, Vienna, Austria Keywords: Mire, 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 mine 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 hot handles, lightning tapes, buckets, mining timber, augers and so on are remnants of large scale prehistoric production systems. A particular difficulty in dealing with these objects lies in the uncertainly 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 bogs, wetlands and underwater sites is essential in the understanding of the finds from the alpine salt and copper mines. 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 Landsessedimental 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 pile-dwellings research. A special focus will be put on new archaeological and palaeoecological results.
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 pile 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 technological properties of the vessels (Rice 1987) but amorphous organic residues analysis has also greatly contributed to understand exploitation of natural resources during the Neolithic (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 shape. At the site of Clairvaux XVI (Middle Neolithic, NMB - 39e-37e century BC), the large and diversified corpus of ceramic vessels (377 vessels with restituted profiles) combined to anoxic conditions favoring lipids preservation offers a unique opportunity to investigate the use of pottery to better understand lake dwelling Neolithic society (Pitérequin et al 2015).

The corpus was first classified based on morphological and morphometric criteria. Chemical analysis of the lipids preserved in the vessels was then 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 volumes of the vessels.

This study highlights some characteristic consumption pattern of the Neolithic people living at Clairvaux XVI 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 food processing development and volumes of the vessels.

TH6-11 Abstract 22

Micro-economic and socio-cultural networks in lakeside settlements

Author - MA Spring, Markus, Zurich 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 which in turn shapes urban space. The emergence of urban pattern is seen as determined for the evolution of configurational networks. These networks, together with spatial agency of individual movement, the flow of people to meet and interact, have a significant impact on the use and existence of urban settlements through micro-economically motivated foreground networks encouraging 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 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, or in 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 Forias has a long tradition. Abundant quality data have been produced since the seventies of the XXth 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 paleoecological 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. 5 L). For that, 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 sampling strategy was conducted and a new method of analysis was developed for the most effective time investment possible. 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 grains). 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 (remains 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 some 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 more or less intensive agricultural practices. The large-scale sampling strategy was conducted in such a way that we could answer specific research questions. For example, we identified that some specific crop plant remains have identified socio-economic processes that activate the act of building which in turn shapes urban space. The emergence of urban pattern is seen as determined for the evolution of configurational networks. These networks, together with spatial agency of individual movement, the flow of people to meet and interact, have a significant impact on the use and existence of urban settlements through micro-economically motivated foreground networks encouraging 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 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, or in 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?

Archaeobotanical research in the Alpine Forias has a long tradition. Abundant quality data have been produced since the seventies of the XXth 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 paleoecological 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. 5 L). For that, 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 sampling strategy was conducted and a new method of analysis was developed for the most effective time investment possible. 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 grains). 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 (remains 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.

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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

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

TH6-11 Abstract 26

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

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Keywords: Prehistoric, osseous, Western Macedonia

Presentation Preference - Poster

TH6-11 Abstract 27

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

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Presentation Preference - Poster

TH6-11 Abstract 28

Geophysical prospection of submerged Neolithic settlements in Lake Sennitca (Pakow Ol., NW Russia)

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Keywords: geophysics, Neolithic, Sennitca

Presentation Preference - Poster

TH6-11 Abstract 29

In the last decade the intensive rescue excavations of the Archaeological Service of Flinnara unearthed a great number of prehistoric settlements close to the four lakes of the Ammindeon basin that date back from Greek Early Neolithic (~6800-5800 BC) to Greek Middle Bronze Age (~2200/2100-1800/1600).

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.
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 near shore, were applied. For magnetic prospections on the pebbly 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.

Various functionality of archaeological objects is determined by the characteristics of their layout and design. It is always connected both with practical issues and with the sacred and social views. The ability to follow the example 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, 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.

Presentation Preference - Poster

Keywords: Baikal region, Neolithic, Planigraphy

TH6-12 Abstract 01

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

Author - Dr. Brogan, Cathriona, Queen's University Belfast, Belfast, United Kingdom (Presenting author)
Co-author(s) - Turchetto, Jacopo, University of Padova, Padova, Italy (Presenting author)

This paper argues that there was a surprising degree of spatial stability between Neolithic and Bronze Age ritual landscapes in the Sperrin Mountains for 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 glens. Today the upper slopes of the mountains are largely unhabitied as the spread of blanket peat has pushed settlement down into the foothills, with the often barren and windswept 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; 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 Sperrin 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 cists and pits becomes more prevalent and new rituals...
structures in the form of stone circles and alignments emerge. These dramatic shifts in culture, and possibly even population, speak of change and discontinuity. Analysis of funerary ritual sites within the Neolithic and Bronze Age ritual landscapes. While the face of ritual may have changed, the overall evidence indicates that the perceived ritual significance of the land endured.

TH6-12 Abstract 02
Viking-Age landscapes in the longue durée: change, continuity, and perceptions of place

Author: Dr. Leonard, Alison, University of Cambridge, Cambridge, United Kingdom (Presenting author)

Keywords: Landscape, Portable material culture, Viking Age

Presentation Preference - Oral

It is no simple task to assign dates to a landscape. In England, however, metal-detected artefacts recovered from rural contexts provide valuable benchmarks that bring chronological narratives of settlement and activity to light. This can be used to highlight specific ‘moments of crisis’ within narrow timeframes, such as the reduced circulation of coins in certain parts of England during the early Viking Age. When viewed from the perspective of the longue durée on the other hand, it often illustrates that despite centuries of political change and large-scale migration, many places were continuously selected for.

Through case studies in eastern and midland England, this paper explores instances of change and continuity in the rural landscape. Looking backwards and forwards from the Viking Age, when visible shifts in settlement would be anticipated, the evidence reveals notable patterns and curious anomalies. Proximity to Roman roads, for example, is a shared trait across the case studies, but why does treatment of other Romano-British structural remains appear to differ so widely? Drawing upon a range of supporting evidence such as place-names and environmental data, and looking at the artifactual and landscape evidence within a number of shifting chronological frames, it is suggested that certain discontinuities and continuities can be explained with reference to the evolving agrarian economy. Conversely, the influence of antecedent features such as barriers and structural remains on successive communities requires alternative explanations. It is suggested that in these cases, their integration or avoidance was contingent upon the ways in which communal memories and local perceptions of place were transferred.

TH6-12 Abstract 03
The way to the shore: why going to the beach may not be as straightforward as you might think

Author: Johnson, Andrew, Manx National Heritage, Douglas, Isle of Man (Presenting author)

Keywords: coastal landing places, Isle of Man, old rights of way

Presentation Preference - Oral

Although modern ports and harbours dominate how we relate to the sea and to associated maritime activities and industries in the present, technological and scalar differences resulted in alternate responses to these new features. Seven modern harbours dominate the 150 km coastline of the Isle of Man, but these represent only a small proportion of the 200 or more landing places surveyed. It is therefore possible to glean from this the reasons the landing places were exploited: fishing and the collection of seaweed are amongst the most obvious uses.

The character and status of the ways to the shore are similarly significant in betraying their former purpose. Some survive only as footpaths, some as tracks leading to individual farms, and others have been transformed into public highways. In this respect, map regression techniques, particularly when allied with GIS, provide a powerful means of gathering and presenting the information.

TH6-12 Abstract 04
Multidisciplinary data-crossing about settlement and land-use in Jura mountains (5th-17th c.)

Author: PhD student Chevassu, Valentin, MSHE Ledoux / Université de Bourgogne-Franche-Comté, BESANCON, France (Presenting author)

Keywords: history of land-use, medieval archaeology, paleoenvironment

Presentation Preference - Oral

In the 16th, the American historian R. Emery (p. 5) defined the French 13th century as “the golden age of the [mendicant] friar”, a hypothesis developed later by the French historian J. Le Goff (1988) in a programme dealing with the relationships between Mendicant Orders and medieval cities. Archival and historical surveys and archaeological studies in other particularly in Blondel (Martin, 1970) or in Alsace and Lorraine (1985) since provided numerous and varied clues allowing a renewal of the problems linked to the settlement and building of mendicant convents. Recent historical and archaeological analyses concerning the north (Voll, 2003) or the south of France (Caby, 2012) enabled to improve the knowledge on the different ways the Mendicants could settle in towns in terms of political, ecclesiastical or material support and integrated spatially and institutionally the city. Nonetheless, the questions of natural constraints, of a pre-established “urban” landscape in the vicinity of the mendicant convents still remains difficult to answer in most cases.

The paper aims at putting emphasis on the phenomena of change and continuity in the settlement of Mendicant Orders in urban spaces through the example of the cities in the diocese of Clermont (Auvergne, centre of France) during the 13th-15th centuries. This is a multidisciplinary approach based on a cross-checking of archaeological, architectural and historical data. It focuses on the reasons why the Mendicants decided to install in specific places in close to the city, particularly for political, economical and social reasons but also due to topographical constraints. It also demonstrates the prevailing reasons for settlement might change according to periods, cities and established urban landscape (p. re-use of religious buildings). Thus, this paper sheds light on the study of long-term religious urban landscape in medieval cities.
Can humans change their spots? Site location patterns in mid-to-upper Paleolithic Cantabrian Spain

Author: Javier, Orozco, University of the Basque Country, Vitoria-Gasteiz, Spain (Presenting author)
Keywords: Late Middle/Early Upper Paleolithic, Settlement patterns, GIS, Spanish Cantabrian region
Presentation Preference: Oral

Research on the European Middle-to-Upper Paleolithic transition has mainly been devoted to issues of long-standing interest like human anatomy, artifact technology, economic strategies, symbolism or, more recently, genetics. By contrast, other aspects of the archaeological record still require further attention, particularly research on landscape perception and use. As a result, very little is actually known on the decisions and conditions that led Late Middle Paleolithic and Early Upper Paleolithic human groups to settle and move back and forth across the geography in this paper, as a pilot approach to investigate this issue, we aim to explore how settlement patterns changed or persisted in a quite constrained and archaeologically rich area, the Cantabrian region (northern Spain). To this end, this study has been undertaken on a total sample of 94 sites showing human use in a time-lapse spanning more than twenty millennia (ca. 45 to 22 ky cal. BP) - coincident with the so-called Late Mousterian, Châtelperronian and Cavarnian cultures. The study integrates the spatial analysis of different variables relating to factors like topography, geology, hydrography and habitability that are examined and calculated with the help of modern tools, mainly GIS. Results are statistically treated and compared with other archaeological and environmental data, showing a complex mixture where divergences in settlement patterns through time can sometimes be evident or not, depending on the variables analyzed, and may reveal different – and not necessarily evolutionary – strategies for the peopling of a changing environment. After all, landscape use has always been about decision-making.

The structuring of the Adriatic littoral landscape between Atria and Altinum during Roman times

Author: Dr. Matteazzi, Michele, Catalan Institute of Classical Archaeology, Vicenza, Italy (Presenting author)
Keywords: Landscape Archaeology, Roman Archaeology, Roman Venetia
Presentation Preference: Oral

The Upper Adriatic littoral zone stretching between the ancient centers of Altinum and Atria (Adria) is a low plain continually redrawn, until the modern age, by an extremely complex hydrographic system, of which rivers Po, Brenta, Adige and Bacchiglione are the main agents; but that also includes a numerous series of canals, drains and ditches that unfill the excess waters to avoid swamping. To all this great mass of water, which has always been a highly destabilizing factor for the plain itself, we must also add other the high morphological variability component of the landscape, i.e. the southern basin of the Venice Lagoon, where the hydrographic system goes (and went) to run out, and that, since ancient times, has offered those harbour areas that were crucial for the economic development of the territory.

If today the relationship between landscape and water looks very tight, we know that was the condition also during Roman times, when classical sources tell us that here was the northernmost part of the great delta of the river Po and of the river Adige, with the Adige estuary extended up to the delta of the river Brenta. These rivers were also an important transportation route, making the area a strategic point for transportation. To all this, the area was also crossed by a number of roads built in 132 BC as a direct connection between Ariminum (Rimini) and Aquileia linking all the important port centers of the Upper Adriatic coast such as Ravenna, Atria and Altinum.

The aim of this presentation is to track the rise and fall of the harbour town of Aquileia. The town, founded in 181 BC around 10 km away from the Adriatic sea on a meander of the Natiso river, stands as a perfect example of a once really strong and powerful town that fell into nothing after the end of the Roman Empire. The socio-economic status of the city reaches its peak starting from the Theatarchic period: as a matter of fact with the Dictelean and Constantian reformations the city received officially the title of capital of the Venetia et Histria region. Moreover, her proximity with the newly Imperial Capital (Mediolanum) put her in a political circuit of primary importance; providing her a role of cultural administrative complementarity in respect of the capital. Her new role granted her a primary importance spot within the imperial agenda, firstly in relation with the Dacian Wars but most of all as a bridge-head for Roman commercial trade routes. This prosperity echoes in the urbanistic evolution both from the point of view of public and private dwellings.

Two centuries after, all of this was not there anymore and the town itself was reduced to a third of its original size. Moreover the new city wall (at the half of the VI Century AD) excluded not only the forum but also the harbour that was the symbol of its past role.

How did it happen? Clearly the temptation of giving all the blame to the barbaric invasions and mainly to the supposed conquest of the town by Attila (493 AD) is strong, but not through this paper I will go beyond these single events trying to track those long period factors that led one of the greatest Italian cities of late antiquity to become little more than a village. Even its own name was recalled in the sources just in relation with its dioceses or as a moment of the unpredictability of fortune. These factors have been both natural (mainly the decrease in the flow rate of the river Natiso) and anthropic (mainly the changes in the power balance of the Roman Empire), the transfer of the capital to Ravenna in 402 AD.

The rivers promised not to deluge the country: the Arno and Serchio lower valleys

Author: Prof. Paquinucci, Marinaella, University of Pisa, Pisa, Italy (Presenting author)
Keywords: coastal progradation, North Etruria, Water management
Presentation Preference: Oral

In North Western Tuscany (ancient Etruria) landscape dynamic transformations, due both to natural and anthropic factors, and phenomena of persistency, resilience and/or durability are studied in a long-term perspective. In this district multidisciplinary researches provide evidence of coastal progradation and erosion, palaeo-environmental changes, water management practices, rural and urban landscapes, manufacturing activities. Significantly, the complex hydrogeological evolution of the Pisa-Lucca territory and the long term human actions aimed at optimizing the rivers regime were already perceived by the ancients, as documented by Strabo after his sources (5.2.5, 222C). In the Roman Late Republican period the critical phases are to be connected with protracted intense rainfalls and with the impact of anthropic activities on the territory (e.g. the Roman colonization in the 2nd and 1st cent. B.C., the upheaval or collapse of the countryside drainage systems, etc.), a period characterized by both sea level rising and by the absence of drastic climatic changes, the coastal evolution was most probably due to anthropic causes.

Among these, the main elements were the construction of new towns and settlements, deforestation and increased agricultural and manufacturing activities connected with the desertification of the countryside in the early 2nd cent. B.C. and in the late 1st cent. B.C., in particular with the organization of their territories (pantano and land allotments). The continuous natural transformation of the
llortal and the hydrologic evolution affected the North Western Eturia sea- and river ports and landing places scattered along the coastline in Antiquity and in the Middle Ages. The Roman road network was constructed on stable soils in the coastal strip and in the main river valleys in the frame of a strategic plan. A post-medieval interesting case study is the coastal plain NW of Pisa. Here since the 15th Century several plans aimed to reclaiming a large swampland South of the Massaciuccoli lake were made but not achieved. In 1653 an attempt was made by the Dutch Van der Breecht, who built a few windmills in order to raise the land. However, the coastal propagation came to end around 1930, the Arno-Serchio rivers sold transport being diverted from their destination to the sea into swamp filling areas in the frame of the systematic land reclamations pursued by the Lorena. That caused the erosion of the Arno delta since the end of the 19th century. The present courses of the Arno and Serchio rivers result from complex natural transformations and anthropic actions taken over the centuries, ranging from the straightening of river segments and the draining of stagnant waters to the construction of embankments, dikes, cause di colmate and the building of canals to deviate flood waters.

TH6-12 Abstract 10

Prosper in Valley, Hide in Mountains:
Dynamics of Settlement in Lubuski (Bosnia and Herzegovina)

Author - Dzidzik, Tomasz, Institute of Archaeology, University of Warsaw, Warszawa, Poland (Presenting author)

Key words: Late Antiquity, Roman, settlement patterns

Presentation Preference - Oral

The paper analyses the changes in settlement brought about by the Roman occupation of the Trebłąt river valley and its surrounding highlands and mountain ranges, a geographically well- defined microregion which today constitutes the modern community of Lubuski in West Herzegoiva. The lay of the land, just a mountain range from the sea coast and with good connections through river valleys and passes with the highlands inland, is such that throughout its history it was the border and contact zone of different cultural, economic and political entities. In antiquity this was the close hinterland of Narona, a major city of the region. Not only was it important for the sustenance of the city’s population due to the rich agricultural land and the pastures in the highlands, but it also played an important strategic role. The most important road in the province, connecting Narona with Salona, the capital of the province, crossed through the valley as it offered the most convenient route. A Roman garrison ensured the safety of this road, the defence of Narona against indigenous tribes resisting the Roman influence and the conflicts between the quickly Romanising farmers in the valley and the more traditional shepherding populations of the highlands.

A non-invasive archaeological landscape project conducted in the area proved that a most close correlation exists in the area between the level of development of the economy, the level of perceived safety and the locations of settlements. The advent of Roman rule, which brought about pacification of the province and economic prosperity, resulted in a gradual shift from the traditional well-defended hiliforts located on peaks to settlement in the valleys, with a local centre emerging in the valley around the major military installation, not only the safest place, but also the largest market in the area. On the other hand, in Late Antiquity the military presence was much weaker, and the safety of the regional system was threatened from the outside. In reaction the settlement seems to disperse and move to the naturally defensible places. A parallel to those cyclical developments can be observed also in the medieval and early modern periods. It appears that the choices of places for settlement and of the main economic activities of the population of the region were dependent on the perceptions of safety, which in this difficult, mountainous landscape could be achieved in one of two ways; by resorting to inhabiting of naturally defensible places or by the participation of peacekeeping forces, demanding both an economical and political outside involvement, but giving the possibility for much more intensive local economic development.

TH6-12 Abstract 11

Comparing cultural transmission patterns in southern Poland during the Bronze and Early Iron Age

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Keywords: Bronze and Early Iron Age, cultural diversity, cultural transmission

Presentation Preference - Oral

In our paper we want to show the methodology and preliminary results of the ongoing project addressing the question when, and in what circumstances, the culture of past societies was determined by such factors as vertical (inter-generational) and horizontal (inter-population) transmission of cultural attributes, and when the decisive role was played by the adaptation to local environment. Several well-investigated settlement regions in southern Poland, intensively occupied for a long time and representing various ecological zones and landscapes (Western Malopolska Lowland, the upper Vistula valley, the Carpathian Forestland, and the West Carpathians), were chosen to test the role of these factors. We apply the comparative method (using standardised data and a set of ‘middle range’ theories) to analyse similarities and differences. The list of variables we included contains: time (the pace and synchronicity of change in past east areas), space (communication factors in inter-population transmission), environment, with its natural and anthropogenic transformations in time, stylistic diversity in manufacturing traditions, organisation of settlement area (at the site and micro-region levels), access to resources, and social hierarchies and relationships. The data are examined using statistical tools, e.g. multidimensional techniques of data exploration, and – in case of stylistic studies – compared with the phylogenetic model. The next stage must cover establishing the nature of identified correlations and identification of potential causal relations.

This way we will explore whether cultural diversity is similar – as proposed by the culture-Historical school, recently supported by many evolutionists – to biodiversity and develops through branching of traditions inherited between generations with only slight modifications (so that we can speak of an ‘essence’ of cultural tradition, typical of certain groups in long cycles of historic processes)? Or perhaps the decisive role played by diffusion - blending of cultural traditions as a result of unique historical events, and the horizontal transmission of patterns within ‘network society’? Or, finally, does the diversity of culture result from tight adaptation to local ecological niche, as adaptationists propose?

TH6-12 Abstract 12

Pastoral Nomads’ Use of the Semi-Arid Syrian Landscape c. 1810-1760 BCE: A GIS Projection

Author - PhD Josephson Hesse, Kristina, Uppsala University, Uppsala, Sweden (Presenting author)

Keywords: GIS, MB Syria-Mesopotamia, Pastoral Nomads

Presentation Preference - Oral

Hundreds of Akkadian clay tablets, derived from archaeological excavations at the palace of Mari by the Ephruses, clarify the strong integration between mobile tribes and city-states in Syria- Mesopotamia during the Old Babylonian period (c. 1810-1760 BCE). My project aims to illuminate the social and economic dynamics between pastoral nomads and settled people in this period, with the focus on the former, based on the economics of food producing, exchange, trade mechanisms, and the various services such as caravan escort and mercenary. Not only are the connections between these groups of people essential, but also their ways of interacting with the surrounding environments.

The paper deals with the first step of methodological network studies in this project, which is to map known sites into GIS together with trade routes, landscape features, suggested tribal territories, natural resources, and some remains (e.g. systems of cairns, corrals, kites) registered in the Syria-Norwegian Palmyrena project that I have been a part of. The structured location of several hundred Bronze Age cairns, distributed on strategic hilltops and wadis outlets, in the mountain range outside the ancient trading centre of Palmyra in Syria, indicates that to addition to have been burial chambers these cairns were secondary used as landmarks of territories and routes for trade and migration of pastoralists with their flocks. The landscape image will constitute the base for my further studies of networks and descriptive connections or relationships between people and tribes with places, trade routes, migration patterns etc.
How did the construction of such buildings transform the landscape and its perception by its hosts, the inhabitants but also their patrons? I will attempt a broad contextual comprehension of this question by considering if and how road caravanserais engaged in binding together the landscape and creating a distinctive cultural landscape. My approach wishes to inform the understanding of the ways in which different road caravanserais’ construction programs can shed light on how landscape, patronage and power were inscribed within different Middle East contexts. In this presentation, in fact, I will compare medieval Anatolia and medieval Syria and I will investigate how the construction of road caravanserais changed the landscape in these two regions. Did it change in the same way? What are the similarities and differences?

TH6-12 Abstract 14
It’s always the same old story... or not?
The ‘changing’ landscape of Cappadocia (Turkey)

Author – Dr. Turchetto, Jacopo, University of Padova, Padova, Italy (Presenting author)
Keywords: Cappadocia, Turkey. Local scale vs. macro-regional scale; Road networks and settlements’ patterns

Presentation Preference - Oral

During the course of the centuries, and especially from the Greco-Roman period to the Seljuk times, Cappadocia represented one of the most important hubs and crossing-points of the Anatolian peninsula. Within that chronological framework, it acted as a cultural, economic and political bridge between East and West of both the classical and the medieval world. For those reasons, taking into consideration the interactions occurred between man (with different needs in different periods) and the landscape (which remained almost the same through time), Cappadocia offers a great variety of ‘food for thought’.

In this paper, I will focus on three different geographical sectors of Cappadocia, each one characterised by its own specific natural features: a) the semi-flat belt between Colonia Archelais/Aksaray and Caesarea/Kayseri, next to the course of the Kızılırmak river, b) the area comprised between Colonia Archelais/Aksaray and Tyana/Kemërhisar, with the volcanic groups of the Melendiz Dağları, Hasan Dağ and Göllü Dağ, and the fertile plain surrounding them; c) the montaneous area between Tyana/Kemërhisar and Kemerhisar, at the foot of the Taurus chain.

In this context, archaeological and topographic evidences point towards the existence of settlements’ choices and itineraries patterns of long duration. However, when examining the matter at a more local scale, what clearly emerges is that (in certain areas, at least) some changes took place through time. Towns or villages were abandoned and replaced by other ones; stretches of routes were no more maintained and fell into disuse; previously exploited areas were for more favourable regions.

Trying to recognise those changes and understand the different reasons of (cultural, economic, political, military, nature) which subverted them will allow to better appreciate the historical evolution of the Cappadocian landscape and the role it played during the course of the centuries.

TH6-12 Abstract 15
Archeogeography of a border: the roman Limes system in south Romania (frontier, roads, landscape)

Author - Fajon, Philippe, Ministère de la Culture, Rouen, France (Presenting author)
Keywords: archeogeography, longue durée, roman times, south Romania, Olt valley

Presentation Preference - Oral

How to consider the meaning of “border” in archeogeography? (beyond the joke about the title of the session) First, it’s useful to consider the different criteria of the limit between 2 territories, based on the thoughts of sociologists and philosophers. Before to be geographical evidences, frontiers and associated road networks are first, an intellectual constructions of societies, second, a mark of the politics, and third a sign for populations. Therefore, this analysis allows to consider the frontier as a cultural, economic and political bridge between East and West of both the classical and the medieval world. For those reasons, examining the matter at a more local scale, what clearly emerges is that (in certain areas, at least) some changes took place through time. Towns or villages were abandoned and replaced by other ones; stretches of routes were no more maintained and fell into disuse; previously exploited areas were for more favourable regions.

With this objective in mind, we attempted to find the exact provenances of (around 250) grave stones, as much as possible, within the frame of our doctoral research, in the inventory records of museums (Antakya Arkeoloji Müzesi, Istanbul Arkeoloji Müzesi, Múzei, Musée du Louvre, Princeton University Art Museum, Worcester Art Museum) and of a local private collection (Ovali Odalar Koleksiyonu). Furthermore, we examined reports, diaries, field notebooks, maps, plans, drawings and sketches of the aforementioned excavations in the Visual Resources Collection of the Department of Art and Archaeology of Princeton University. We have thus been able to draw the topographical context to which the grave stones originally belong.

In this paper, we will present main results of our study concerning the urban outlines in ascertaining the information we presently have at hand.

This good use of the territory, and its associated organization, has crossed the times until the humankind modify natural lands.

The contemporary landscape organization keeps different remains of this situation in the lineaments, in the parceling system and in the road network. It also shows us that the «colonization» by the Roman Empire keeps a part of the former forms when it is in accordance to the new one.

Since the middle of the twentieth century, most of the testimonies of this very organized frontier have disappeared. Because of its originality, it’s now time to look at its last remains as a huge historical monument which needs to be kept for national memory of Romania.
Archeological research in the area is still being carried out thus final evaluation and interpretation of the identified archeological structures will be done only after the fieldworks are finished and then all data will be put together and compared with historical and geological data.

In fact, we are talking about two totally different behavioral patterns that did not imply the residence in the same place. On the right bank of the Sava River, east of the village Krška as there used to be an area of late medieval and post medieval village. The Sava River is a typical Alpine river. Water levels can rise fairly high because of melting snow and seasonal spring rains. It can still cause major flooding in the event of a so called one-hundred-year flood. Flooding of the area did not stop until the second half of 19th and the first half of 20th century when the Sava River was regulated. Many of the abandoned river channels can still be seen in the landscape. In 2016 analysis of地产 and geological survey were made as part of preliminary research of the area. Investigations led to the conclusion that the area has been heavily transformed and that not many remains of medieval and post medieval buildings could be preserved in situ. Architectural remains of buildings were literary erased from the face of the earth due to massive water erosion that destroyed predominantly wooden architecture. In 2009 extensive and intensive archeological field surveys took place in the area. In 2014 and 2015 also trial trenching of 25,5ha in the eastern part and smaller archeological excavations in the western part of potential medieval village area were carried out. Archaeological research in the area revealed that only few farm houses were not completely destroyed during flooding and meandering of the river channels. Many river channels were also identified during excavations. A few of them were regulated and were used for communication by the residents of the village, as the canals’ banks were fortified with limestone slabs.

The earliest known archaeological remains of iron production in the study area are from the 2nd-4th century, when the success of production was directly dependent on the landscape. By contrast, iron manufacturing in the Duchy of Courland (16th-18th century) was an important factor in the process of transformation of the landscape. By using an inter-disciplinary approach of archeology, history and natural sciences, the changes in landscape-production agency will be analysed.

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**TH6-12 Abstract 19**

Warfare and Urban Transformation in Late Antique Central Balkans

**Author:** Jelena, Jarić, Oxford, United Kingdom (Presenting author)

**Keywords:** Late Antiquity, Transformation, Urbanism

**Presentation Preference:** Post-Flyer

This paper will focus on urbanisation in the Central Balkan provinces and how it changed during Late Antiquity, which is also the topic of my doctoral research. The region had a crucial strategic position for the Empire, enabled by central location and good connectivity through natural passages and major roads. The good communication network also enabled a highly-developed trade system and exploitation of resources, especially ore deposits. Its cities were hubs of political and economic power, as well as cultural and ecclesiastical centres.

An older theory, still held in regional scholarship, is that the marauding raids of the various barbarian groups had a devastating effect on Late Antiquity urbanization. While I agree that raiding had a negative impact on cities, I rather see the raids as factors of transformation which prompted the cities to become more militarized and actively involved in the imperial defence. Cities were given stronger fortifications and military edifices, such as annex storage houses, and new cities emerged. I will use one case study on these newly emerging cities (the unnamed city at the site of Konjuh in the Republic of Macedonia) to challenge the notion of dying Late Antique urbanisation and I will try to elaborate more on the issues that kept regional scholarship clinging to this notion and lagging greatly behind the more developed international scholarship on Late Antiquity and Late Antiquity urbanisation.

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**TH6-12 Abstract 20**

Medieval and post medieval village of Zasavje

**Author:** Murko, Miha, Institute for the Protection of Cultural Heritage of Slovenia, Ljubljana, Slovenia (Presenting author)

**Co-author(s):** Bavec, Uroš, Institute for the Protection of Cultural Heritage of Slovenia, Novo mesto, Slovenia

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**Keywords:** Brežice (southern Slovenia), flood, medieval, post medieval

**Presentation Preference:** Poster

In the vicinity of city Brežice (southern Slovenia) Institute for the Protection of Cultural Heritage of Slovenia, Centre for Preventive archeology is carrying out a large-scale archeological project as a new Hydroelectric power plant is being built on the Sava River. A number of archeological sites are under threat of being destroyed by different infrastructural building works and by flooding of huge areas in order to make the accumulation lake. Archaeological research of the area, started in 2008, is still not finished.

On the right bank of the Sava River, east of the village Krška as there used to be an area of late medieval and post medieval village of Zasavje, which existed until 1781 when extensive flooding destroyed the old village. After the floods only a few farms were set anew in the vicinity, and until the beginning of 20th century the area was completely abandoned and became agricultural farm land.

Presentation Preference: Poster
Among the factors that affected the dramatic shifts in patterns of living are: deforestation, imposition and acceptance of a macro regional housing model that fits better to the new type of economy, the need for an efficient exploitation of local sources (especially salt).

As a consequence, at the transition from the Middle Bronze Age to the Late Bronze Age in Eastern Romania it occurs a major change in the housing model which was represented by fortified settlements (strongholds, inter alia: visibility, the control of some satellite settlements, the control of the access roads, the placing in the proximity important water courses). This model encountered in the all the Sub-Carpathian area will be replaced with a kind of a micro regional swarming model much closer for the cattle breeders communities with new preferences (secondary and tiny watercourses, lowlands, Chernozem soil, solarity, seasonal dwelling structures). These changes are visible at the level of the communication system and transfer of goods, too. Thus, the dominant north-south road in the Middle Bronze Age is replaced with east-west road that seems to dominate the Late Bronze Age. By adding these features can be certified a kind of a territorial exclusion: the Middle Bronze Age communities preferred the area located between the north-south hydrographic axis represented by the Siret River in the east and the Carpathian area in the west. On the other hand, the Late Bronze Age communities seem to avoid the pre-alpine location and preferred the area bounded by the Siret River in the west and the north of the Black Sea in the east.

Through the interconnection of the data obtained from the landscape analysis, the analysis of materiality, of the different perceptions for this two types of communities it result that for the area of study was applied a model of a total change. In the proposed case study, that took place in a micro region in eastern Romania, there were found the data to support this assumption.
Surgical treatment at the Danish Cistercian Abbey of Gm - A critical analysis

Author: MA Møllerup, Lone, Museum Stenderborg, Stenderborg, Denmark (Presenting author)

Keywords: Medieval Monastery, Skeletal Paleopathology, Surgical Treatment

Presentation Preference: Oral

Through eight decades the Cistercian Abbey of Gm, Denmark, has been well known nationally and internationally for its traces of surgical treatments on medieval human bones. The human bones derive from the monastic burial grounds in and around the Abbey ruin. Most of the bone material was excavated in the period 1933-1936 and followed up with a Danish publication in 1936 and a German publication in 1941, both dealing with the skeletal paleopathology. These publications furthermore argued that the monastery functioned as a hospital in the medieval period 1172-1536 AD, a claim which has since, remained practically undebated. Modern anthropological analysis is questioning the former interpretation of the human skeletal material. New insight gives the basis to reevaluate the role of the Cistercian monks as physicians and surgeons. This paper looks into the alleged surgical treatment on human bones and deals with the question, whether surgery has taken place at the site, as well as the monastery’s role as a medieval hospital.

TH6-13 Abstract 04

Heavy metal: health, medical tradition and cultural exchange in historic Iceland

Author: Walter BI, Joe Wallace, Reykjavik, Iceland (Presenting author)

Keywords: disease, osteology, alchemy, heavy metals, culture, Iceland, monastery, hospital, medicine, treatment, syphilis, mercury, palaeopathology, ICP-MS

Presentation Preference: Oral

Snídfúlakarst, located in the east of Iceland near the Vatnajökull glacier, operated between AD 1493-1554. As an Augustinian monastery, Snídfúlakarst ran a hospital with sophisticated medical practitioners, providing medical and surgical treatments. The specialised medical knowledge, range of medicinal plants and herbs, and evidence of imported objects and food found at the site are indicative of Iceland’s international cultural inclusion in the past. Between 2002-2011, 271 out of 265 individuals were excavated from the site, presenting a vast array of medical conditions including syphilis, tuberculosis, hydatidosis and Paget’s disease, for example. In addition to disease, it is also vital to consider environmental influences on human health as a result of living conditions, climate, diet, and other factors over the decades after the large volcanic eruption in Veíjerð in 1477.

In the 13th century, alchemists began to use cinnabar ore (mercury sulphur) as a medicinal elixir as it was believed to impart long life due to its deep red color and philosophical associations with blood and the soul. Towards the end of the 15th century, distillations and fumigations of mercury from cinnabar became widely used to treat syphilis and remained to be the only viable treatment for syphilis until the 20th century. Otherwise, mercury (cinnabar ore) was used as a red colored pigment in scholarly longevity due to its deep red color and philosophical associations with blood and the soul. Towards the end of the 15th century, distillations and fumigations of mercury from cinnabar became widely used to treat syphilis and remained to be the only viable treatment for syphilis until the 20th century. Otherwise, mercury (cinnabar ore) was used as a red colored pigment in scholarly.

Inductively coupled plasma mass spectrometry (ICP-MS) was used to measure heavy metal concentrations in 50 samples from individuals excavated at Snídfúlakarst. This presentation will discuss the results of osteological and chemical analyses, considering environmental, medical and occupational exposure to heavy metals. The results of stable isotope analysis for heavy metal: health, medical tradition and cultural exchange in historic Iceland.
It is well known that many treatments for diseases and injuries existed in the later Medieval period (ca. 1050-1550 CE) in Northern Europe. Written records, surgical instruments and other artefacts for wound treatment, medicinal plants and various materials used to treat illnesses have been widely discussed. However, very little evidence of such treatments is readily observable when we analyse the actual recipients of such procedures. Therefore this presentation aims to provide a critical evaluation of potential evidence for treatment found in human skeletal remains from archaeological contexts from Northern European countries, and in particular England. Palaeopathological analyses have established that a range of diseases and injuries are visible on the human skeleton, although the majority of diseases would have only affected the soft tissues. The most commonly observed skeletal lesions include dental disease and trauma. Dental disease in the form of caries and periodical lesions increased in the later Medieval period, especially with the wider availability of sugar and finely milled flour which would have promoted dental caries. However, according to medical treatises removal of infected teeth was largely avoided and it must be speculated that the high percentage of teeth lost ante-mortem in medieval individuals can be attributed to natural causes. Fumigation was one form of treatment for ‘tooth worms’ thought to cause dental caries and potentially such treatment could initiate the upper respiratory tract and, if chronic, could lead to mastillary abscesses. Nevertheless, since infections may have a number of different causes and should therefore not be seen as proof for dental treatment.

More solid evidence for treatment is found in form of surgical interventions such as trepanations and amputations. Trepanations, or opening of the cranial vault has been practiced for millennia and evidence for successfully healed (and unhealed) trepanations is known from almost every continent. Trepanations would have been performed to treat head injuries, epilepsy or other neurological problems. Despite a high survival rate of patients in earlier times, the number of skeletons found with trepanations decreases in the later Medieval period in Northern Europe, attesting that other, probably less invasive treatments for cranial trauma and neurological disorders were favoured. Amputations are rarely seen in human remains and the few known examples from late Medieval England and the rest of northern Europe might be due to the low survival rate of affected individuals. Furthermore, unhealed amputations might not be easily observable and they can potentially be mistaken for post-mortem damage. Lastly, fractures, especially of long bones, when healed with little deformities have been viewed as evidence for fracture treatment. However, it has to be acknowledged that fractures of the lower leg and bones, when affecting only one bone might normally heal without angulation, even in the absence of treatment.

In conjunction with these examples, further evidence for fracture treatment will be discussed and critically evaluated, but it has to be concluded that without additional contextual evidence human skeletal remains are not an unambiguous source of information if we want to infer medical treatment in the past.

Keywords:
- Albrecht, M., State Office for Heritage Management and Archaeology Saxony-Anhalt, Halle (Saale), Germany
- Brauer, J., State Office for Heritage Management and Archaeology Saxony-Anhalt, Halle (Saale), Germany
- Alt, KW., Danube Private University, Krems-Stein, Austria

Presentation Preference: Oral

Bioarchaeology allows the reconstruction of people’s life-ways even if they are largely ‘off the written record’. This paper focuses on the marginalisation of stigmatised individuals during the English Middle Ages (800-1485) and its osteological evidence. This study analyses cemeteries from known medieval leperias (e.g. Chichester, United Kingdom) as leprosy is recognized to be highly stigmatising and led to segregation of affected individuals. Even if not all individuals in the hospitals were suffering from the disease, all of them were outlets of society. In particular, cemeteries dating prior to 1350 will be considered as leprosy declined after the mid-14th century and historical documents suggest a greater use of hospitals as shelter for the poor and old.

An increased rate of long bone fractures in leprosy-associated cemeteries has been stated in the literature (Judd & Roberts 1998). Considering the location of the injuries and the previous exclusion of rib fractures it is hypothesised that these fractures cannot solely be attributed to leprosy, although the disease causes sensorimotoric problems. Interpersonal violence is investigated as possible reason for the increased rate of ante- and perimortem injuries and this aspect is discussed here in detail. The baseline for the analysis is obtained from newly generated fracture distribution patterns of various social classes and regions throughout medieval England. Leprosy hospitals are known to be quasi-monastic environments but there seems little similarity to the fracture patterns seen in monastic individuals. Therefore the patterns are compared to cemeteries associated with higher and lower social status as well as assemblages from other settings. Some attention is paid to the occurrence of fracture patterns that in forensic studies have been associated with physical abuse. Previously it has been demonstrated that domestic violence is hardly accessible within the bioarchaeological record. Fracture distribution patterns, including the ribs, will allow new interpretations of the data. Rib fractures have often been excluded from previous studies but are one of today’s major indicators of maltreatment and are considered along long bones and cranial injuries in this study. It is suggested that the social exclusion of the ‘dead among the living’ extended into physical harassment and abuse.

The research broadens our understanding of medieval hospitals as isolation-enforcing shelter, the people’s interactions with social outcasts; the study challenges our perception of the approach to leprosy within the society of the Middle Ages in England. Additionally, bioarchaeological research will profit from the generation of fracture patterns that include bones. It will allow studies which fractures are likely due to daily activities of the medieval English population and set a baseline for future research.

Reference:
fractures, were found in eight individuals, of which five were estimated to be males or possible males and three were females or possible females. Three had died as young adults, three as mature adults, and one as an old adult. Collar fractures were found in five individuals; five were females and one was male. Two of these were young adults, two mature adults, and two old adults. One female was diagnosed with a Clay shoveller fracture of the 1st and 2nd thoracic vertebra, and one young adult male with a Boxer’s fracture of the fifth metacarpal. Examples of trauma also include two subluxated shoulders and one case of impactus ossificans on the posterior tibia.

Males had more trauma than females and the prevalence was higher in older individuals, which was also found in most of the previous bioarchaeological studies. The ribs, tibia, and skull were more affected in males, while the radius, ulna, and vertebrae were more commonly involved in females. The radius and ulna were more affected in the individuals that died as old adults. Interestingly in our study trauma was found to be positively correlated with moderate or considerable amounts of dental calculus and osteochondritis dissecans, and the implications of these findings will be discussed in more detail.

Both the observed trauma consisted of well healed lesions with only slight angular deformity and little overlap. Two of the fractures were healed but ununited, and two were unhealed perimortem injuries. Barber-surgeons in many of the locations are known from historical sources and in the mid-18th century provincial doctors were employed to treat the injured.

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TH6-13 Abstract 11

Living on the Edge: 
Trauma Patterns in Medieval Vilnius (16-18th c.)

Author - PhD student Kozakalite, Justina, Faculty of History, Vilnius University, Vilnius, Lithuania (Presenting author)

Keywords: Trauma, Vilnius

Presentation Preference - Oral

Skeletal remains provide one of the most crucial and direct sources of evidence for the occurrence of violence, work related activities, and ill fortune in the past. While fractures are the most common pathological condition, we still struggle with the most plausible explanations for its cause and presumable outcomes.

Vilnius, the city of diversity, both religious and cultural, serves as an interesting subject for studies of everyday life and its peculiarities in medieval period. Thus, 5 different objects representing varying social status were selected for investigation of trauma pattern: Cathedral and Liejyklos street (17-18th c.) - elite members of society, church of The Holy Trinity (17-18th c.) - clergy, 11th-12th century Mindaugas street (16th c.) - poor.

A total of 109 injured individuals (27.3% of total individual count) were observed among 400 examined males, females, and non-adults. 82 (20.5%) had only one fracture, while 27 (6.8%) suffered more than one injury. Five cases were recorded as perimortem - no healing signs suggested an early death. Males correspond to the universal model which indicates their dependency to a higher-risk group: injured males consisted 75.2% of all injured individuals. The most common fractured part of the skeleton was a rib accounting 30.3% of all injured individuals. Female fractures were characterized by injury to the forearm and spine area, while the males were predisposed to diverse fracture locations.

Interesting patterns emerged when compared different sites. While Mindaugas street burial ground considered to consist of poorest part of the town, the fracture rate was surprisingly low compared to those of elite, clergy or ordinary town-dwellers. Furthermore, latter indicated many of their lesions were a result of higher energy accidents with involvement of a large portions of body parts. Meanwhile, statistically significant difference was observed between higher-ranking part of society and laymen in terms of head trauma – the former being more susceptible to it.

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TH6-13 Abstract 12

Social welfare and health status of the Upper Lautisz - a Tormersdorf/Toporów settlement case study

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Co-author(s) - MSc Konczewska, Magdalena, University of Wrocław Institute of Archaeology, Wrocław, Poland

Keywords: Excavations, Lower Lusatia, Paleopathology

Presentation Preference - Oral

Since 2014 the Department of Anthropology at the Wrocław University of Life and Environmental Sciences has been conducting the project titled People, culture and natural environment of Upper Lautisz based on the example of research of the settlement micro-region Tormersdorf/Toporów funded by National Science Centre in Poland.

One of the objective of the research project is to present complete and interdisciplinary analysis of the historical population, its culture and environmental interactions on the basis of the Tormersdorf/Toporów settlement from the late Middle Ages until its destroying during II World War in 1945.

Accomplishment of the research includes reconstruction of the biological condition of the population based on broadly approached reconstruction of the health status, including comprehensive analysis of the skeletal lesion.

So far, during two seasons of field work carried out in the micro-region Tormersdorf/Toporów, excavations were conducted within the relics of the cemetery, located to the northwest of the ruins of the village. During archaeological analysis, only one phase of use of the cemetery was found, dated on the first half of the XIXth century and from that period 32 adults (24 men and 8 women) were excavated.

Pathological lesions were present in all excavated skeletons. Its intensity was predominantly high. In 26 cases (81%) intravital tooth loss was visible. Dental caries was present in 20 cases (62.5%) and in 9 cases (28%) periodontal lesions were found. Moreover, degenerative and overload lesions of the spine, injuries and bone fractures were observed as well. An unique case of the male skeleton in maturus class of age with bilateral amputation of lower thigh was found.

The nature, intensity and incidence of pathological changes found in the skeletons from the cemetery from the micro-region Tormersdorf/Toporów may indicate study group exhibit distinctive features. Variety and occurrence of the pathological lesions may indicate a low level of hygiene, poor health conditions and long-lasting work overloading of the individuals as well.

Based on archival data, it was established that at the turn of the XIXth century in former Tormersdorf theosocial care home (Brüder-und PflegehausZOAR) was functioning. This allows to pose working hypothesis that the majority (even all) of the graves found in Tormersdorf/Toporów are likely to be associated with burials of the resident of this institution.

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TH6-13 Abstract 13

Medieval medical cultures in Sweden – practices and ideas mirrored in materiality

Author - PhD Bergqvist, Johanna, Lund university, Genarp, Sweden (Presenting author)

Keywords: archaeology, medicine, medieval

Presentation Preference - Poster

Medical practice is formed not primarily by knowledge, but by culturally motivated apprehensions of what disease is, what causes it and how the body functions. In medieval Sweden (by today’s geographical borders) the monastic orders brought with them a medical culture with roots in ancient classical and medieval scholastic traditions. This medical culture included its special material culture, i.e. in the form of surgical instruments and other equipment. These artefacts are encountered when monastic sites are excavated. A previous assumption within medieval history has been that it was the monasteries which brought medical knowledge to the North. However, an extensive survey of archaeological findings in Sweden, has revealed that artefacts related to monastic medical culture did not spread outside the monastic milieu to the surrounding society. This can be interpreted as the result of a very limited dissemination of the practices and ideas associated with monastic medical culture. In this paper possible explanations to this, such as clashing medical cultures or paradigms (monastic versus indigenous) and diverse traditions and conditions of communication of knowledge, are discussed. The content of the paper is based on some of the results of a larger research project, published as a doctoral thesis in 2013.

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TH6-13 Abstract 14

The construction of monastic medical culture - a case study from Notre-Dame de la Mer (12th-13th c.)

Author - Prof. Myllylä, Hannu, University of Helsinki, Finland (Presenting author)

Co-author(s) - Nordic School of Human Culture History (Network for History of Science)

Keywords: medieval, history of medicine, conservation, material culture

Presentation Preference - Oral

To assess the construction of monastic medical culture we present a case study from the 12th-13th century medieval hospital of Notre-Dame de la Mer in Paris. The remains of the hospital were excavated from 2000-2005 by a team of experts from the French National Museum of Archaeology. The art of Joan Blomberg was involved in the project. The project was funded by the French Ministry of Culture. The project has expanded into a network for history of medicine (Nordic School of Human Culture History).

The hospital was founded in the early 12th century and it was attached to the monastic community of Notre-Dame de la Mer. The hospital was situated on the north bank of the Seine River. The hospital was accompanied by a church that was dedicated to St. Joan of Arc. The church was destroyed by the Revolution. The hospital was supported by the monastic community and by the city of Paris. The hospital was divided into three sections: the great hospital, the small hospital, and the infirmary. The great hospital was the biggest section of the hospital. It was used for the treatment of patients with infectious diseases. The small hospital was used for the treatment of patients with non-infectious diseases. The infirmary was used for the treatment of patients with chronic diseases.

The hospital was equipped with a large number of medical instruments. The most important instruments were the medical instruments for the treatment of infectious diseases. The medical instruments for the treatment of infectious diseases included the medical instruments for the treatment of boils, ulcers, and abscesses. The medical instruments for the treatment of non-infectious diseases included the medical instruments for the treatment of fractures, the medical instruments for the treatment of dislocations, and the medical instruments for the treatment of hernias.

The medical instruments for the treatment of infectious diseases included the medical instruments for the treatment of boils, ulcers, and abscesses. The medical instruments for the treatment of boils included the medical instruments for the treatment of boils on the skin, the medical instruments for the treatment of boils on the head, and the medical instruments for the treatment of boils on the limbs. The medical instruments for the treatment of ulcers included the medical instruments for the treatment of ulcers on the skin, the medical instruments for the treatment of ulcers on the head, and the medical instruments for the treatment of ulcers on the limbs. The medical instruments for the treatment of abscesses included the medical instruments for the treatment of abscesses on the skin, the medical instruments for the treatment of abscesses on the head, and the medical instruments for the treatment of abscesses on the limbs.


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TH6-14

IN HEAVEN AS IT IS ON EARTH:
ARCHAEOLOGICAL TRACES OF MINORITIES
AND RADICAL RELIGIOUS IDEAS
WITHIN SOCIAL IDENTITIES IN THE MIDDLE AGES

Friday, 2 September 2016, 14:00-16:00
Faculty of Philology, Room SP2
Author - Garcia-Contreras-Ruiz, Guillermo, University of Reading, Reading, United Kingdom (Presenting author)
Co-author(s) - Tejerizo, Carlos, Universidad del País Vasco, Vitoria, Spain
Keywords: Archaeology of religion, Minorities religious, Social identities

Presentation Preference - Regular session

Understood as a part of social identity of past societies, religion shall be contextualized in a historic and social frame that can explain this phenomenon in terms of complexity. Religion can be seen as part of macro-ideological discourses, such as the Crusades or Jihad, or as part of the relation between States and religious institutions, but also a form to shape social relationships within local communities and a form of political and ideological control among those who profess a different faith of the rulers.

The main aim will be to explore the possibilities and limits of archaeology to study religion as a social phenomenon in past societies and to shape its importance in different case studies within a long-term view. The session will discuss religion both in its importance as a state institution and as a social form of identification within local communities and minority religions, and also the conflicts derived from the contact of these spheres, as for example when internal transformations from radicalization of some groups within major religions are produced. The first groups were targeted by stigma and discrimination, especially when religious differences are correlated with other instances of social identity, such as ethnicity. The second have been agents of change at different times, causing not only cultural reforms, but above all economic, political and social transformation. Both are needed to understand the role of religion as a part of social identity, and to serve to understand the cultural complexity of the Middle Ages and beyond.

Which kind of material record is available for the study of these groups? What are the main differences of minorities and radical versus majorities beyond the cults? How does religion reinforce their identities in relation to others? These are some of the questions we intend to address in this session.

TH6-14 Abstract 01

Muslim and Protestant religious minorities
and funerary spaces in south of France

Author - Gleize, Yves, Pessac, France (Presenting author)
Keywords: Funerary archaeology, Religious minorities, South of France

During the Middle Ages, the institutionalization of the concept of Christian cemetery raises the question of the integration of the religious minorities. Were religious minorities always separated from funerary spaces and how were they organized? Archaeological data could inform on specific funerary practices of peculiar communities. Thus different types of graves have been identified by funerary archaeology and their analysis could sometimes provide evidence of the existence of different groups. However their study requires a careful inquiry to identify religious minorities and the possibility of specific funerary spaces.

Small groups of graves recently excavated in South of France could be maybe linked with religious minorities as Muslims and Protestants. But their identification and their study require taking in account historical context and different archaeological parameters. The archaeological analysis crossing at the same time archaeological and biological data allow to bring new data on the identity of the deceaseds, on the funerary practices and the organization of funerary spaces. Examples from recent excavations in south of France, in particular from the city of Nîmes, will be analyzed by crossing at the same time textual and archaeological sources. These discoveries all led in France allow to discuss the intrusion or not of communities such as the Muslims or the Protestants in the funerary spaces. But it will important to analyze their presence over the long term of history and to try to distinguish potential evolution.

TH6-14 Abstract 02

Dealing with identities. Archaeological traces of Muslims
and Dimmi-s in the Middle Mark

Author - Bueno, Marisa, Université Paris Est-creteil, Paris, France (Presenting author)
Keywords: Archaeology, Ethnicity, Identity

Presentation Preference - Oral

In this paper I deal with the problems derived from adscription of archaeological data to Berbers, Muslims and Christians in the north of the Middle Mark of al-Andalus. I present both, the results of archaeological surveys integrating data from the Archaeological and Culture Territorial Service of Soria, Castilla-León, and the analysis of materials preserved in the Numantino Museum (Soria) used in my PhD dissertation. I will pay special attention to cemeteries sites such as Milto de Medinaceli and Conqueraula. These sites reflect the different powers successively overlapped and the problems concerning the adscription of identifiable beings in the complex Middle frontier between 8th-11th centuries.

The settlement of Umayyad’s powers in the north-est of the Middle Frontier is a process quite well established through written Islamic sources: between the 8th and 9th century different Berbers Imagis, clients of the Umayyad’s lords were settled in this area, years later, after the nomination of Abi- al-Rhaman III (D99) as Caliph, this area was rebuit and became the most active frontier with Christians in al-Andalus between the 10th and 11th century. However, the explicit recognition of these realities raised delicate problems concerning their chronological and religious-identitarian adscription.

In one hand, the settlement of Berbers Imagis in this area, as we already say, clients of the Umayyad’s lords raised with the problem of their adscription to a specific material culture. What kind of archaeological data can we use as cultural markers of this specific ethnicity? What interpretation problems present these indicators in order to identify Berber population? Are they fully assimilated with the Umayyad’s elites? Can we demonstrate the islamization traces of this population?

After 946, Medinaizel was rebuilt and became the administrative centre of the Middle Mark, while the nearby fortress of Gormaz became the military centre, the starting point for the northern expeditions replacing the Atienza fortress. This area became a sophisticated frontier based entirely in a network of fortress and towers depended on Umayyad power, and the expression of the power of the Umayyad Caliphate based on Jadid mentality.

However, the new Muslims’ rulers were not installed over an uninhabited areas, terra deserta, but rather over a territory previously politically-disarticulated. The previous indigenous inhabitants were mostly “Christians”. The new power granted them a protected subordinate place in society through the status of dimmi-s or protected people. The traces of these people are almost invisible, mainly rock-cut tombs sites. These ones are not associated with artificial or osteological remains, thus making it impossible to determine accurate chronologies, so they merit to be integrated in a collective debate.

TH6-14 Abstract 03

From hand to mouth: dietary perspectives
on religious minorities in Medieval Portugal

Author - Toso, Alice, University of York, York, United Kingdom (Presenting author)
Co-author(s) - Dr. Alexander, Michelle, University of York, York, United Kingdom
Keywords: Diet, Isotopes, Medieval Portugal

Presentation Preference - Oral

Diet had an important cultural and symbolic meaning in medieval societies. In particular, the preparation and consumption or avoidance of certain foods played a significant part in the construction of identities by social status, age, sex and faith. This is especially intriguing for the multi-faith societies of Medieval Iberia. Christians, Muslims and Jews co-existed during the medieval period. In multi-faith societies co-existence and rulers’ religious tolerance towards minorities are intricately linked, affecting all aspects of socio-religious life including dietary requirements. This paper addresses debates on socio-religious changes in an understudied area of Portuguese history: applying carbon (13C) and nitrogen (15N) stable isotope analysis to investigate the diets of Islamic and Christian communities in medieval Portugal under shifting religious political control. Stable isotope analysis, which provides direct evidence of the diet of archaeological individuals, has been applied to the skeletal remains of Muslims and Christians from the medieval sites of Beja (9th-12thC AD) and Silves (9th-13thC AD). These sites are notable for the presence of communities of Muslims and Christians that co-existed before and after the Christian conquest. Beja provides the remarkable opportunity to analyse contemporaneous Muslims and Christians living under Muslim rule and buried in the same burial ground. In addition Silves offers an influence into the influence of the Christian conquest onto the economy and lifestyle of the Christian minorities in southern Portugal as well as the effect of the shifting political control on the pre-existing Muslim groups. The combination of the data from these two societies will provide information on the economies and the subsistence strategies put in place by religious minorities as well as shedding light on the development of medieval pluralistic societies under shifting powers and during transitional periods.
The origins of the Inquisition are related to the power that religion had in Medieval times, representing values as engines of collective lives. As a result, the Catholic Church and the Papacy took over, since the 12th century, the leading role in the fight against heresy. The Inquisition had its origin at that time, and its development through the Catholic world led to its official creation in Portugal in 1536, aiming the surveillance of the ‘purity of faith’, the suppression of heresy, and the discipline of religious beliefs and behaviors, essentially related with the Jewish presence in the Portuguese territory. In 2007/2008 an archaelogical excavation took place in approximately 12% of the so-called Jail Cleaning Yard, the dump of the Inquisition court. Having as starting point this archaelogical excavation, this work aims to discuss several archaelogical traces on how the Catholic Church developed mechanisms currently understood as radical to deal with the presence of religious minorities. Twelve adult individuals in articulation (3 males, 9 females) were recovered and a minimum number of 16 were identified from a commingled context. The absence of funerary dishes suggests that the bodies were deposited directly in the dump. Moreover, the variability of the orientation and position of the body and limbs, and the absence of grave goods are not in accordance with the procedures of a Catholic burial. These results are underlined by the fact that the individuals were recovered from a location that was not sacred. Also, the manuscripts from the Inquisition allowed the identification of 87 prisoners who died during the period in which the dump had been in use (somewhere between 1658 and 1634), and showed that at least 11 (12.6%) of them were confirmed discarded in the dump, likely because they were charged of Judaism, heresy and apostasy. The archaelogical traces, as well as the anthropological and historical contexts, are in accordance with the characterization of these individuals as unburied dead, that were not judge by the court of the Portuguese Inquisition and reconciled with the Catholic faith before they died. More than a penalty to the body, this was a punishment to the soul of the deceased. Nevertheless, we will never be certain if these individuals were really Jews, once it could happen that people made their accusations because they were afraid of being accused first. Also, the defendant never knew what crime he was accused or even who made the accusation. From this perspective, the archaelogical findings have to be interpreted carefully, but also show us the climate of fear created in people’s everyday life. Even so, these individuals show a unique context which can be used in the future to help interpret other burials which do not fit within the usual scope of the Catholic burial rules in Medieval and Modern times.

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### TH6-14 Abstract 05

**Archaeology of the Spanish Civil War:**

Is new data contributing to a deeper understanding?

**Author:** Dr. Perez-Juez, Amalia, Boston University, Madrid, Spain (Presenting author)

**Co-author(s):** Dr. Morín, J., AUDEMA, Madrid, Spain

**Keywords:** archaeology of conflict, Spanish civil war, trenches

**Presentation Preference:** Oral

**Abstract:**

Between 1936 and 1939, Spain was blased out in a Civil War, a prelude of what the whole of Europe would go through only months later. After almost 40 years of dictatorship, and the unanimous yearning to reach a peaceful transition into democracy, archaeological research of Civil War sites was all but silenced until just recently. In 2000, our team undertook one of the first excavations of Civil War sites in Spain, “Casas de Murcia”, part of the lines of defenses built by the Republicans to protect Madrid. Trenches, bunkers, machine gun nests, and other features were rapidly built and fiercely occupied for almost three years in order to stop Franco’s armies in his advance towards the capital.

The site, which was not subject to protection at the beginning of the 21st century, was completely excavated and researched, and the results were fully published and presented to the public in a temporary exhibition. The enormous amount of information that emerged from that excavation surprised everyone. For researchers, it meant more data to add to the documents and recovering material culture; for the general public, it became a way to reconnect to the landscape that had witnessed part of a family chronicle; for politicians, it was another good media story. No one was to remain indifferent to what an excavation from this time period could yield.

In the fifteen years that have since passed, many things have changed in Spain regarding the Archaeology of the Civil War. Legislation protects the sites, excavations are conducted in a variety places, mass graves have been unearthed and bodies identified, and objects of all kinds have been recovered and restored. But these achievements, far from bringing the population closer to understanding this part of history, have re-opened wounds of the Civil War. The archaeology of recent conflicts is a complex topic. The research becomes intertwined with emotions and fears, and personal stories come to life in a setting of loss and destruction. Why are we not using these new data to overcome differences? Why is the Archaeology of the

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### TH6-14 Abstract 06

**The Fact of the Mother Goddess**

**Author:** PhD Sozer Kolemenoglu, Selma, Marmara university, Istanbul, Turkey (Presenting author)

**Keywords:** Religion, Art, Archaeology, Mythology, Philosophy

**Presentation Preference:** Poster

**Introduction-Purpose:** In this study, we show that the terminological context of the Mother Goddess idols are dealt in the context of mythology, art, archaeology, philosophy and religion. The connections of the effects of the idol wares which the antique individual (the figure) had left on their social structures, were found by means of exploration. The idol message is thought as symbolic evidence and its context is tried to be presented.

**Material-Method:** The typological phases of the Mother Goddess idol wares in the history of culture, as evidences made of different materials in various museums in Anatolia, were classified. Particularly, the wares which were taken out in the Neo-Italic period, was tried to be correlated with the archaelogical narratives, the social events in the world conjuncture through philosophy, religion and mythological accumulation. The Mother Goddess wares were evaluated in compliance with the environment which they emerged in rules, principles and style as well as the social structure they addressed to. In describing the human being, we widely observe that he is connected with the mythological legends and holy scripture doctrines. FINDINGS: The role of the semantic integrities in the history of religions and their connections in the holy scriptures, may be needed to be examined.

We think that some critical scientific theories in art, religion and archaeology may have correlation with the idols. By taking the interpretations in the holy scriptures and the mythologies, their theses and antitheses were frequently compared. The fixed most important topic was that the observability of whether the abstract symbolic knowledge which is necessary in knowing humanbeing, the sociological ideas realized in the life environment by coming to know the life, RESULT: We found out that the conquests which had been realized in different periods of the History of Humanity are hidden in the inner depth of human. The definition of the Pharaoh, idol (ego), (con was observed to be the abstract, emotional gap which made the life harder in the human structure. The concepts such as the Mother Goddess idols and Pharaoh are the explanations of this empty space as signs and symbols. This determination is that by scrutinizing the existence which bear critical meanings beyond time, there may be an explanation of the life prescription of the history of humanity. It is seen that this prescription is the Noble Quran which constituted an important bridge between the past, which sheds light to the future which have been examined throughout the ages, with the future.
TH6-15 Abstract 01

Saint-Denis, Archaeology, territory and citizenship

Author - Director Rodrigues, Nicole, Unité d’archéologie de la ville de Saint-Denis, Saint-Denis, France (Presenting author)

Keywords: Archaeology, Citizenship, Territory

Presentation Preference - Oral

Saint-Denis, one of the major sites of French history is also a suburban town, an area that suffered the 13 November attacks, near the “Stade de France”, the symbol of the growth of the town of the 21st century. Here, the new constructions and urban development have erased the shape of the ancient town. More than 40 years of urban archaeology allowed us to gather data to understand the mechanism of urban growth from the beginning to present day. In order to place the research in a long term framework, in 1982, the municipality created the archaeological Unit.

The Saint-Denis excavations have produced a vast mass of archaeological finds. Archaeology is a concrete discipline, perfectly suited for establish direct contact with general public. The outreach program, “Archaeology, territory and citizenship” is in progress since 1998. The goal of this project is to transform archaeological material into tools of understanding the territory. We are not using monumental remains but finds of daily life, experimental structure and local links, to cross both the know-how of past and present. This project, supported by the European projects, ACE and NEARCH is every time an experience, because it deeply relates to the practices that Saint-Denis should encourage. The term “convivencia” is used in Spanish because this was the concept developed in medieval Iberian Peninsula to denominate the coexistence, partially cooperative partly conflictual, of Jewish, Muslim and Christian communities (http://www.mpwebberin.mopg.org/workshops/an/Convivencia.html). “Convivencia” means more than living together, it is practicing coexistence between communities and actors in contexts of cultural heterogeneity.

Critical accounts of “convivencia” should acknowledge that these actions occur amidst conflicts and networks that are also crossed by asymmetrical relations of power. The other regard of this session is “Saint Denis”, an area that suffered the 13-N attacks, where the Unité d’archéologie has developed activity under the aim of using the archaeological foundations of the town to create a shared identity and neighborhood. Archaeology, because its relation to materiality, memory and identity, is useful to mediate in these conflicting contexts. It unveils disserts, creates basis for intersubjectivity, promotes dialog between agents and communities, and provides means for public and community activism.

Session aims to explore these capacities and reflect about contradictions inside these practices. We should both consider theoretical approaches and identify good examples of projects that could help to strengthen this application of Archaeology and be helped by our recognition. Cases studies can derive from any sort of cultural heterogeneity and communities interactions.

TH6-15 Abstract 02

Desiring First Nations to live with Muslims, A Basque reflection on existence and coexistence

Author - Dr. Escribano-Ruiz, Sergio, University of the Basque Country (UPV/EHU), Vitoria-Gasteiz, Spain (Presenting author)

Keywords: First Nations, convivencia

Presentation Preference - Oral

On 23rd October 2015 last, several unidentified persons threw rubbish in the mosque of Llodio (Araba). Several days later, a hooded person threatened and insulted those who were congregated inside. Nobody had ever had these kinds of incidents before 13th November in a village that is proud to coexist with one of the largest Saharan communities of the Basque Country. This duality, which links emerging xenophobia with consolidated internationalist activities, represents a recurring ideological structure in the Basque Country. The attachment is greater with respect to oppressed people of whom we empathize and whom we support. Indifference is the prevailing attitude with those groups that are not defined politically. Apathy turns into hate when certain tragic events, intensified by devastating media coverage, at precise times shatter peaceful coexistence.

The Basque Country is also going through other internal processes focused on restoring peaceful coexistence.

On outlining one of the characteristics of the Basque idiosyncrasy with respect to the “other”, we found that one of the principal characteristics generating empathy is the identification with a particular condition of this social subject. Therefore, we suggest that one of the paths towards sustainable coexistence is the generation of emotional connections with the peoples under debate. In synthesis, we have to look for cases that enable us to identify ourselves with the “other” societies with whom we coexist or at least obligate ourselves to understand them. A common denominator could be emigration, a very well-represented aspect in the Basque past and which today defines Muslim communities. And one of the most paradigmatic examples of Basque coexistence is the case of fisheries of the North Atlantic, which involved the interaction between Basques, Europeans and Canada’s First Nations. In the proposed paper, we will reflect on the manner in which the socialisation of this example can generate mechanisms of proximity and tolerance between the Basque and Muslim peoples.

TH6-15 Abstract 03

Heritage for convivencia: The Inter-American and Caribbean Cultural Heritage Working Group Meeting

Author - Dr. Majewski, Teresa, Statistical Research, Inc., Tucson, United States of America (Presenting author)

Keywords: convivencia, cultural heritage, disciplinary heterogeneity

Presentation Preference - Oral

In response to ever-growing threats to intangible and tangible cultural heritage in the region, the Anthropology Department of the State University of Campinas (UNICAMP), Campinas, Brazil, organized and held the inaugural meeting of the Inter-American and Caribbean Cultural Heritage Working Group on August 11–12, 2015, at UNICAMP. The goal of the meeting was to establish a permanent collaborative forum to explore ways to improve practical and theoretical approaches to cultural heritage practice. Representatives from major anthropological and archaeological associations based in the Americas and the Caribbean, the UNICAMP Anthropology Department, and interested individuals discussed how stakeholders should engage with these issues to foster outcomes in the best interest of society. In less than two days of working together, the group drafted a declaration on the need to protect and safeguard cultural heritage in the Americas and the Caribbean and stressed the need for improvements in the theoretical and practical approaches used to develop community-based investigations about and interpretations of cultural heritage.

The declaration is expected to foster increased discussion and collaboration on cultural heritage studies. Created in English, the document has already been translated into Spanish, French, and Portuguese. The group is currently seeking formal approval from each of the professional societies and academic institutions that sent representatives to the inaugural meeting that they will become convening signatories to the declaration. A number have already agreed to “sign on.”

Participants in the working group include archaeologists, cultural anthropologists, and linguists. The development of the “Campinas Declaration” is used as a case study to explore the dynamics of international, heterogeneous disciplinary communities working together successfully to craft a declaration that could be a model for collaboration in heritage studies. The declaration itself was crafted through intensive but brief collaboration that created an intellectual bond among the participants. Whether the working group can become a sustainable network of functioning partners will depend on the willingness of the sponsoring organizations to allow the network to flourish and establish working procedures that allow for its independent operation. If the focus can remain on a joint understanding that threats to cultural heritage, both tangible and intangible, are real and share universal elements, convivencia is distinctly possible. Archaeologists can contribute much to the success of the relationship because of their experience working with stakeholder communities concerned with both intangible and tangible heritage.
TH6-Archaeology without borders

TH6-15 Abstract 04
Integrating Archaeology at Vitoria-Gasteiz (Basque Country): terrorism, immigration and peace

Author: - Professor Xurxo, Ayre, University of Basque Country, Vitoria-Gasteiz, Spain (Presenting author)
Co-author(s): - Garca Rodriguez, Sonia, University of Basque Country, Vitoria-Gasteiz, Spain
Keywords: Archaeology of Contemporary Past, Community Archaeology, Integrating Archaeology
Presentation Preference - Oral

In the late 1950’s and early 1960’s the small Basque town of Vitoria-Gasteiz became an important industrial center that attracted thousands of immigrants from other Spanish regions. Although it was considered by the francoist regime as a model of ‘social peace’, the city saw the emergence of armed resistance by ETA and a significant labor unrest. Strikes of 1976 ended in a bloodbath. The crackdown on March 3, 1978 is a milestone for the city’s population. The arrival of democracy in 1978 led to the conversion of Vitoria-Gasteiz in the capital of the Basque Autonomous Community. This region has a nationalist majority claiming independence for the Basque Country or at least converting Spain into a federal state.

In recent years the city has experienced a second wave of migration, with newcomers from the countries of Eastern Europe, Latin America, North Africa and sub-Saharan Africa. With 250,000 inhabitants, the Basque capital has become today in a multiethnic urban space. As in the 1960s, it is a challenge to integrate this immigrants. A challenge not without its problems. Despite the effort made by the administration (social support) and civil society (platform ‘Gora Gasteiz’) at urban level they are creating new ghettos. A rejection of initiatives such as the construction of mosques (especially those working-class neighborhoods that housed the first immigrants of the late twentieth century) has been observed.

At this very reality of globalization, in Vitoria-Gasteiz it is being lived another equally important process. The cessation of armed activity by ETA in 2011 has given way to a period of peace building and collective memory throughout Public policies of memory trying to do justice to the victims of the Franco’s regime (1937-1975), of the terrorist group ETA (1956-2011) and State terrorism. Thus, the weight of terror continues to set the social and political agenda of the city in 2016. A purely Spanish terror, for now.

Within this reality, we believe that Archaeology of Contemporary Past is a valid and useful tool to try to consolidate a culture of peace, overcome the traumas of the past and promote a real integration of immigrants. In our communication we show the work of Heritage socialization that we have developed over the past three years: workshops on Archaeology of the Spanish Civil War, guided tours at working-class neighborhoods of Vitoria-Gasteiz, cultural courses about Archaeology of Francoism at community centers. As a case study we will present the example of the district of Coronación, erected by the dictatorship in the early 50’s to accommodate Spanish immigrants. Today Coronación welcomes much of the new Maghreb and sub-Saharan immigrants. The European Union is developing here between 2016-2020 a regeneration project of the neighborhood (Smart City). Our Community Archaeology Project aims to recover the material traces of the past, to present the history of the neighborhood and promote the integration of old and new neighbors across the Urban Heritage.

TH6-15 Abstract 05
Uncovering convivencia from the dark depth of modernity: toward intercultural rights to heritage

Author: - Orlandi Barbano, Francesco, Castron Bostens, Italy (Presenting author)
Keywords: decolonial theory, indigenous archaeologies, intercultural human rights
Presentation Preference - Oral

In 1492 the last Islamic kingdom in Spain was taken and from the reconquista of Granada the conquista of the so-called “New World”. Until this year convivencia meant that cultural diversity was managed in a way by each group with its own material and spiritual references was able to define its own path of development. But after the Spanish conquest the perception of cultural diversity was the justification for the exclusion of “others” and the imposition of a dominant culture which was called “Christian” that it was, and somewhere it still is, a synonymous for “civilized”. In Granada, according to the Italian historian Adriano Prosperi, it was ignited the seed of intolerance” that would have been the source for the legitimation of European expansion and colonial power throughout the world.

By focusing the attention on the process of modernity as a project for imposing a universal ethic and controlling peoples through their racial classification, Latin American decolonial theorists have shown how euro-western powers have been able to shape a world-system characterized by a logic of exclusion/inclusion in which the “Others” were those whose cultural and epistemic difference seemed to be unsustainable with the right way of social relation, cultural practice or economic development. Heritage conservation emerged within the context of imagining the national communities and formalizing imperial powers in XIX century. International protection of heritage followed this ambiguous origin and it has been made possible in the second half of XX century thanks to its institutionalization and bureaucratization. Such a regime of heritage practice has reached its highest recognition in the last few decades through the deployment of multicultural policies within the context of the neoliberal affirmation of cultural diversity. But the same politics have made it possible the organisation and visualization of a world indigenous resistance based on the cultural relation between communities and the lands, in which the pre-modernity, that is the pre-colonial tradition, is articulated with the global context and participate in it by a counter-hegemonic use of universal categories such as human rights and heritage conservation.

Archaeology is a methodology but it is also a theoretical source for linking past, present and future. It makes possible to give an alternative account of human rights trope by showing the resistance exercised by whom have suffered those rights as an imposition, and it allows local communities, specialty indigenous communities, to appropriate the universal mean of human rights and articulating it with their own category of thought and experiences. I would like to show how all human rights shall be interconnected and culturalized (this is “thought” from a perspective product of a particular experience) in order to be a real opportunity for social change and development, and so the herenarchical of heritage (inasmuch as it is the material and immaterial legacy of the past) for promoting respect among peoples by the mutual acknowledgement of both identity and difference, without avoiding the misunderstandings by virtue of which a real intercultural project is thinkable and enticing.

TH6-15 Abstract 06
The Archaeology of science or what we owe to others

Author: Forrestal, Colin, Berkshire Archaeological Society, Wokingham, United Kingdom (Presenting author)
Keywords: Archaeology, Perception, Science
Presentation Preference - Oral

Humanity today generally accepts the science and technology of this modern global society is a result of Western JudeoChristian philosophy and its gift to the world. Anyone criticising this apparent hedonistic Shangrila or even not accepting modern scientific and technological ways without signing up for this perspective as to how life should be lived and the laws it observes are branded outcasts or worse terrorists. This alienates people’s and forgets to acknowledge the ingrained conservatism of human nature. Move to fast to quick people dig their heads in.

This paper examines the origins of this science and technology we are so proud of and shows that it is as a result of cooperation and trade of ideas and goods and that a lot of what we consider western science is anything but. It also examines how modern technology can learn from archaeology. Religion is mostly a social code for a population to live by, that is acceptable to that population. Extremism is found when that religion becomes fundamentalist due to ill considered emphasis on modern views and techniques that science, education, archaeology and people suffer. Sometimes though it is circumstances that change people’s perceptions and a new belief system appears. This paper will also cover these aspects as well.
TH6-16 Abstract 01

Testing twined clothing in Mesolithic

Author - Rimkutė, Virginija, Vilnius University, Vilnius, Lithuania (Presenting author)

Keywords: experimental archaeology, Mesolithic, twined clothing

Presentation Preference - Oral

In 2008-2010, some experiments, testing possibilities of (re)constructing twined clothing, were held. They were based on a find from the middle-late Neolithic settlement of Šventoji 2B (Lithuania), dated back to ~4000-2900 BC. The found two specimens were made of lime bast. They were compared with other extant European twines of similar or close periods. Three pieces of rectangular shape were produced, in order to test some technical and functional questions.

In 2012, it was decided to come back to one of the objects, which had inspired some construction and wearing possibilities of the (re)constructed twined clothing. It was an engraving on the aurochs bone, depicting five anthropomorphic figures, which was found in Ryemarksgård settlement (Denmark) and dated back to ~8000 BC. A set of photos, testing various variations of wearing the three pieces of clothing, was taken. There were tested more than 25 wearing possibilities, both male and female. Then it was tried to find out poses and actual pieces of clothing, which would best match the depicted figures. According to the congruous silhouette and constructional lines of the clothing, it was presumed, that most of the figures wore a rectangular long cloth ("a cloak"), just in 3-4 different ways. Some of the figures possibly wore a shorter rectangular cloth ("a skirt") underneath. Repeating parallel lines of the depicted clothing clearly indicate twining, and actual qualities of the (re)constructed twines do confirm the indication. Thus, it is highly possible, that twined clothing was produced and worn by some Mesolithic communities, i.e. much earlier than the dates of the extent finds had allowed presuming.

TH6-16 Abstract 02

New experimental data for discussing bone and antler softening methods in the Stone Age

Author - MA Kuriga, Justyna, Institute of Archaeology, Nicolaus Copernicus University, Toruń, Poland (Presenting author)

Co-author(s) - PhD Daiprzczeń, Grzegorz, Institute of Archaeology, Nicolaus Copernicus University, Toruń, Poland

Keywords: antler, bone, use wear analysis

Presentation Preference - Oral

During the speech results of the latest experimental works conducted at the Institute of Archaeology, Nicolaus Copernicus University are going to be presented. It will be shown the most effective methods for softening bone and antler materials. The subject of the research was both the ease of processing with the use of flint tools and the possibility to shape the material by bending. The aim of the experiments was to identify the methods or methods that could have been used by prehistoric communities.

The experiments involved deer antler as well as bovine long bones and ribs. Seven methods most commonly referred to in the literature were subjected to testing, which include soaking in water, lactic acid, oxalic acid, urine, flux oil, tyre and boiling in water. Additionally, an unfinished raw material was subjected to processing as part of a comparative test. In the case of soaking-related methods, the samples were exposed to the substances for a 3-week period with regular monitoring of chemical changes occurring therein. Once every week the rate of softening in the raw materials was tested in order to specify their bending properties and their susceptibility to sawing with the use of flint flakes.

As a result of the conducted experiments many interesting discrepancies in the effectiveness of individual methods were observed. Some of them seem highly effective, while others appear to be useful only in specific aspects or prove completely ineffective. In course of the speech some of the current ideas regarding the discussed area of prehistoric economy shall be verified basing on the obtained data.

TH6-16 Abstract 03

Research, experimentation and outreach in the early Neolithic site of La Draga (Banyoles-Spain)

Author - Antoni, Palomo, Universitat Autònoma de Barcelona, Bellaterra, Spain (Presenting author)

Co-author(s) - Buch, Montserrat, Arqueòdific, Banyoles, Spain

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Keywords: Experimental Archaeology, Outreach

Presentation Preference - Oral

The exceptional preservation of organic material in the early Neolithic site of La Draga (Banyoles, North-east of Iberian Peninsula) has allowed undertake lines of research little developed previously in the region. The research project carried out at the site of La Draga involves experimental archaeology as a methodological tool in order to characterize the technological procedures and for testing the functional hypothesis of tools. Data drawn on these investigations are the foundation stone for the pedagogical project of La Draga, mainly based upon hands experience. These outreach activities are held in the Archaeological Park of the Neolithic Settlement of La Draga, where early farmers dwellings, tools and agricultural plots have been replicated following the results of the archaeological research. In this paper some examples of the interaction between experimental research, digital technologies and outreach activities are presented.

TH6-16 Abstract 04

Prehistoric drilling and bead manufacturing: Experimental approach and cognitive insight

Author - Dr. Gurova, Maria, National Institute of Archaeology with Museum, Bulgarian Academy of Sciences, Sofia, Bulgaria (Presenting author)

Keywords: drilling, experiments, prehistoric beads

Presentation Preference - Oral

Two categories of early Neolithic objects are recognized on the Balkans as having been involved in prehistoric drilling activities: beads and other decorative and prestigious items made of bone, shell, pottery and various minerals, and toolkits of flint micro-borers. This paper discusses experiments in drilling different materials undertaken with the aim of testing several practical issues. A series of flint micro-borers were produced and used for manual and mechanical drilling (with a pump mechanism) of minerals and rocks, ranging in hardness (on Mohs scale) from 3 (marble, limestone, calcite) to 6.5 (amazonite, nephrite). Moreover, experiments were also carried out in the experiments: aragonite (shells) and apatite (bones). The initial attempts at bead production involved the manufacture of 16 delicate beads from 5 different materials using fine sand and water abrasion. Though not conclusive, the experimental work is instructive in many of the parameters, procedures and technical details of prehistoric drilling and bead manufacturing. The experience gained has led to a more holistic interpretation of archaeological drilling toolkits, as well as for better appreciation of the particular skills and know-how of the prehistoric jewellers at work.
In this paper, we will present the results of five-year Experimental Archaeology Project on making Eneolithic pottery, based on our research in the Kojđadem-Rumëghëta-Karanovo VI tell settlement from Subotica-Mala Rovu, south-east Romania. In our work, we have experimented with different hand-making techniques such as building the vessels from one lump of clay, cooling and also molding. Experimenting with the molding technique came as a necessity in our effort to understand the presence of large and shallow plate-like vessels (sometimes larger than 50 cm in diameter), in the pottery assemblages characteristic of these past communities. To understand better the making pots process, we have also tested a series of hypotheses regarding the types of clay, temper, modeling, burnishing, decorating, drying and firing.

Our work is backed up by petrographic and chemical analysis which not only helped us identify the local clay source as the raw material used by the Eneolithic potters but also gave us a more precise recipe for the mixture of clay and temper. The data collected over these years now help us to refine observations when studying new assemblages, thus leading to a better understanding of the pottery resulted from the excavation, and the people who made it. This work was performed through the Partnerships in Priority Areas Program - PN II, developed with the support of MEN - UEFSCDI, project no. PN-II-PT-PCCA-2013-4-2352.

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**TH6-16 Abstract 06**

**Experimental studies on ceramic provenance from southern Iberia**

**Author** - Dr. Kraeger, Michal, Adam Mickiewicz University in Poznan, Poznan, Poland (Presenting author)

**Co-author(s)** - Bartkowiak, Maria, Adam Mickiewicz University in Poznan, Poznan, Poland

**Keywords**: archaeometry, experimental archaeology, pottery

**Presentation Preference** - Oral

The undertaken research addresses a problem of provenance of ceramic assemblages from southern part of Iberian Peninsula in the early Iron Age, particularly differentiation between local and foreign origin of so-called Tarshian pottery through experimental studies. This investigation took into consideration mainly the technological aspects of pottery production and focused on both different applied techniques (hand-made and wheel-made) and the morphological and typological diversity of analysed assemblages. The proposed paper makes an attempt to examine the Tarshian ceramics not from a traditional typological posture seeking the chronological sequences; the dominant approach used in this research is based on archaeometric up-to-date methodology, and thereby shed a light of these, still relatively weak recognized aspects in the study of the Iron Age pottery from the Iberian Peninsula. To achieve this goal a non-invasive X-ray spectrometer has been used in order to determine the chemical differences between ceramics from the local sites of Lower Guadalquivir region. The integral part of this study is an experimental examination of clay paste of sherds, samples of local clay sources and raw material obtained from sites surroundings in order recognize the processes of forming the particular types of vessels and establish the condition and temperature of the firing. All analyzed potsherds and clay samples with various added inclusions were fired in oxygen atmosphere at several temperatures increasing gradually, starting from 600°C and ending at 1200°C. The physicochemical properties of samples were measured after raising the temperature up every 50°C, their radical changes enable a determination of original firing temperature of prehistoric vessels and possible provenance of clay sources.

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**TH6-16 Abstract 07**

The swatch of antiques bronzes

**Author** - PhD student Devogelaër, Jonathan, Aix-Marseille Université, Aix-en-Provence, France (Presenting author)

**Keywords**: antiques bronzes, Colours, Swatch

**Presentation Preference** - Oral

As part of my thesis, entitled 'The colours of bronze ceremonial furniture in the Graeco-Roman world, 200 B.C.E. - 200 C.E.: from technical characterization to symbolic values', I have developed an experimental archaeology project to create a swatch of the various colours of antiques bronzes, and to retrace the original colours of Graeco-Roman bronze furniture. I intend to change the presumed image of ancient bronze as green, lacking for evidence of polychromy and a spectrum of copper alloys. This swatch combines the technical processes of the lost wax method and the addition of polychrome bronze surfaces (via patina and inlay). I intend to use this study as a repository both for my research and for other studies related to bronze production. Bronze is an alloy of copper and tin, lead may also be added. The objects examined in this study have a variable percentage of metals, and because of this the colour of the alloy differs. The colour of the alloy can be maintained by polishing but it is also possible to give a patina to the surface of the bronze with a reagent. Other metals and other materials (silver, gold, Coptic-Celtic bronze) can be inlaid by damascene or by plating to create polychrome decorations. Unfortunately, the archaeological material in copper alloys suffers the effects of time and deposition, which may lead to corrosion and discolouring of the surface, often green or brown. Archaeological bronzes also may suffer from overly aggressive restorations which scour the original surfaces or cover them with a layer of paint imitating green corrosion.

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**TH6-16 Abstract 08**

A Romano-British glass bracelet: rediscovering a technique

**Author** - Dr. Ileva, Tatiana, Newcastle University, Newcastle upon Tyne, United Kingdom (Presenting author)

**Keywords**: glass bracelet, Roman Britain, technique

**Presentation Preference** - Oral

The paper will discuss the production technique of the seamless Romano-British glass bracelets that has been reconstructed by working with the modern glassmakers and through the close inspection of the British glass bracelet fragments. The production of the rigid annular objects composed of coloured glass in Britain is dated to the mid-1st century AD, starting with the Roman invasion in AD 43. Prior to that, Britain had no history of glass bracelets' production, yet the late Iron Age Continental glass bracelets have been all attested throughout Britain, albeit on a smaller scale. The close inspection of the fragments by the author had hinted at the possibility that the Roman-period British glass bracelets have been produced in the similar manner as some of the La Tène Continental bracelet types. This has been confirmed by the experiments conducted by the author with the experienced glassmaker, who specialised in making historical beads and pendants. Further experiments shed light on the production and application of the decorative features to bracelets. Most British annulars have either twisted cord decorations or trails with curved terminals. The common theoretical opinion is that cords and trails were marvered flash, e.g. by rolling a hot glass bracelet on a flat surface. This idea has been contested by the experiments, which indicated a simpler way of applying a decoration, further confirmed by the analysis of the fragments. The paper will present these findings and discuss how the experimental archaeology provides us with the clues about the points of interaction between craftsmen of Continental and British origin in the late Iron Age and Roman European Northwest.

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**TH6-16 Abstract 09**

Teaching Experimental Archaeology at Vilnius University

**Author** - Rimkus, Virginija, Vilnius University, Vilnius, Lithuania

**Co-author(s)** - Luchtinas, Aleksijaus, Vilnius University, Vilnius, Lithuania (Presenting author)

**Keywords**: experimental archaeology, higher education, teaching

**Presentation Preference** - Oral

Vilnius University is the oldest institution of higher education in Lithuania, founded in 1579. Since 1940’s, an independent teaching of archaeology has started. At present, at the Department of Archaeology of the Faculty of History, the studies of archaeology are organized in three cycles: undergraduate, graduate and post-graduate.

Teaching of experimental archaeology for students of archaeology was started more than ten years ago. Students get acquainted with some basics of experimental archaeology during the first year of their undergraduate studies. A full course of experimental archaeology (6 ECTS credits) is taught during the first year of archaeology graduate’s programme. The course consists of theory of experimental archaeology, discussions and numerous workshops. The workshops are lead by experimental archaeologists and ancient technology experts, in cooperation with craft and experimental archaeology organizations (workshop gallery “Amatu gilda”, workshop-iving museum “Seniu amatu dibutis”, club for craft reconstruction “Dvaro mėstis”, experimental archaeology club “Paļaja”), as well as some museums (Archaeological and Historical Museum of Kogy pub, Air Museum of Lithuania at Rumšiškės). The studied periods vary from Stone Age to Late Middle Ages, so thus wide is the range of materials: bone/antler, flint, stones, fibres, plants, textiles, leather, food, non-ferrous metals, ceramics, etc. The course ends up with an exam, which contains a presentation of a particular committed archaeological experiment. After the exam, the students do their MA theses. Usually, this course is chosen by a group of 8-15 students. As a result, students get both theoretical knowledge and some basic practical skills for using experimental archaeology as a research method in their MA theses or, later, in their doctoral dissertations. Also they use their skills at their work as ancient technologists and educators at living archaeology events and historical museums.
Experimental archaeology in Latvia: some aspects possibilities for the future development

Author: Dr. Tomsons, Artūrs, Latvian National History museum, Riga, Latvia (Presenting author)
Co-author(s): Kucypera, Pawel, Nicolaus Copernicus University in Toruń (NCU), Toruń, Poland
Keywords: education, experimental archaeology, reconstruction

The presentation is dedicated to main stages of the development of experimental approach and applying its methodology in the archaeology of Latvia. Presentation examines main stages of development of the scientific thought and various expressions both in reconstructive experiments and interpretations, both in future possibilities of using it in future scientific research as well as a powerful tool in education of archaeology students and tourism.

Microwear analysis on early medieval combs

Author: Pi, Nathalie, Vrije Universiteit Brussel, Gengelen, Belgium (Presenting author)
Co-author(s): Tys, Drines, Vrije Universiteit Brussel, Brussels, Belgium
Keywords: bone antler, combs, microwear

The typological study of bone or antler combs can give useful information in their chronological and regional diversity. Macroscopic research and chemical analyses on the other hand help us to identify aspects such as the origin of the raw material, the native aspect of the combs as well as their trade value. The possible use of different tools in early medieval ages is well documented through literature. However, much less attention went so far as to questions what tools and techniques were applied on individual combs as well as questions about their use.

Through microwear research, an attempt is made to reconstruct the production of the comb, as well as its possible life biography. This microwear method was originally, in 1933 by Semenov, applied on lithic objects, but later it was also used on other materials, such as bone and antler. However, the application of early medieval tools on antler with the aim of making combs was not conducted yet.

The method contains three stages. First, starting from a functional hypothesis, an experimental program is established. In this stage combs are processed respecting both the type of raw materials and technical transformation sequences. Secondly, usage traces, developed on the experimental samples and archaeological samples are recorded with low and high power magnification. Finally, the traces on the experimental and archaeological objects are compared. The interpretation of the production techniques in chronologically and regional different contexts can so confirm or refute typological subdivisions. The maintenance of local techniques can be explored, distinct ruptures in used techniques may be associated to other context-based roles, as social, economic and ideological meaning of a material.
Among the wide variety of decoration techniques discovered at the Alba Iulia-Lumea Noua site (Transylvania, Romania), a specific painted decoration is the present state of research. The only technique that can be definitely attributed to the small Middle Neolithic communities called Lumea Noua cultural group. Being the only material evidence that could lead to the configuration of this cultural aspect for the moment, various archaeometric analysis were made on a large number of samples, in order to extract all the information regarding the technology that has been used to produce such painted decorations. Based on the material analysis, this paper represents an experimental foray into the manufacturing and firing of painted pottery, that we know so little about, in the Transylvanian Middle Neolithic.

The starting point was a detailed analysis of typical installations discovered in the painted pottery cultural areas that have evolved in the Transylvanian territory. A selected single-chambered kiln type, which could have been used for the mentioned goal. We conducted several experiments in order to understand better how these kilns were constructed and we have tested the functioning system of the device.

The experimental results are a clear indicator of the presence of skilled potters and they could also change the traditional archaeological approach that links the quality of the pots with the elaborate installation for firing Neolithic pottery.

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Flint awls: theory and practice

It is known that flint awls are not a common phenomenon in Stone Age inventory. This material has not have a separate sub-group in East Baltic region so far. Nevertheless, there were carried out several classification works, experimental and trascological results in order to represent the data of this research. The material was collected from Lithuanian settlements of Stone Age, which is divided into mesolithic and neolithic time-period. In addition, there were made several copies of mentioned material and completed experiments by using different kinds of animals' skin: bison, deer, roe deer, beaver and mink. Skins and furs, especially deer skin was chosen according to fauna of Mesolithic period. However, mink is, also, a suitable example according to group of small mammals, for instance, martens. This is the evidence not only of fauna of that particular time-period, but, also, shows the thickness of different animals’ skin. Also, attention was paid to the functionality of flint awls utilization in different time-period according to leather processing. The experiments were tested by using rawed furs, which were dried, full of vegetal tannin and prepared skin. According to the data, it might be considered the effectiveness of flint material usage. Also, it has been established, which edges felt the biggest pressure during the process and which were worn out. After the research, it has been created the technological database, which are orientated to specifically one material analysis.

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Expense vs. Effect: An analysis of selected variables that affect the production of cost surfaces

Cost Surfaces Analysis has become a common, if sometimes controversial, tool within archaeological study. Today, there are numerous GIS packages that allow the creation of cost surfaces and least cost paths at the “push of a button” (ArcGIS, GRASS, Idrisi). However, this is often at the detriment of hiding the technicalities of the program’s method, which may not always be ideal for archaeological research. As such it is often advised that these pre-prepared solutions should not be overly relied on (Herzog, 2013, 184, Rademaker et al. 2012, 38). Yet, there are few papers dedicated to assessing the effects of varying any of the modifiable parameters available to each program, and therefore few guides in selecting an appropriate methodology. Those that do focus only on a limited selection of variables (Gietl et al 2008, Magyari-Sgaka, Z. & Dombyg, Z. 2012, ‘Determining minimum hiking time using DEM’, in Geographica Napocensis Anul 82, pp.124-21). Rademaker, K., Rood, O. A., & Bromley, G. R. (2012). Connecting the Dots: least cost analysis, Palaeography, and the search for Paleolithic sites in southern highland Peru. In White and Surface-Evans (eds) Least Cost Analysis of Social Landscapes: Archaeological Case Studies. University of Utah Press, Salt Lake City, 32-45.

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New experimental works conducted at the Institute of Archaeology NCU (Poland)

Among the studies conducted over the last years several projects deserve particular attention. Above all, it is worth to note the new experiments related to the non-ceramic tar production method developed by members of the SEPA. Moreover, experiments with the use of a replica of a Neolithic drill for stone have also continued, aiming to provide an interpretation of the methods for drilling holes in areas made of this raw material. At present, works have been focused on the possibility to employ wooden drill bits. Other project was dedicated to substances that could have been used in the prehistoric times as adhesives. Here, analyses involved binders, such as, tar, pine resin or hoof glue. Experiments with bone or antler softening techniques are also conducted. Within the frame of a project that is currently executed methods with the use of water, lactic acid, oxalic acid, urine, flax oil and tyre are examined. What is more, two large projects related to experimental construction of a Mesolithic hut and a neolithic-type shallow pit house have been completed recently.

Projects planned for the future involve, i.a., a series of experiments regarding wood processing with the use of burning as well as ates made of stone and horn. We hope, that these experiments will prove an excellent opportunity to make a replica of a prehistoric dugout boat.
The Committee on Professional Associations meets annually during the EAA Conference. It will reflect on the developments in the past year. Members will present on the situation in their countries and organisations. The committee sees a great potential for Professional Organizations to improve the place and recognition of archaeologists in society by promoting professional conduct and behaviour in the different countries and Europe as a whole. Furthermore it sees a role for these organizations to take on an advocacy role to enlarge the awareness of the values that are inherently connected and make cultural heritage. It aims to work in close cooperation with the board of EAA and therefore to further the aims of this organisation. During the committee meeting in Glasgow it looked for possibilities to stimulate the growth of Professional Organisations within European Archaeology. This exchange of ideas and experiences will be continued during this meeting.

TH6-17 Abstract 01
The Institute of Archaeologists of Ireland: An update on our Activities

Author - Dr. Bonsall, James, Institute of Archaeologists of Ireland, Dublin, Ireland (Presenting author)
Co-author(s) - Cadogan, Michael, Institute of Archaeologists of Ireland, Dublin, Ireland

Keywords: Advocacy, Ireland, Professional

The Institute of Archaeologists of Ireland (IAI) is the representative organisation for archaeologists throughout the island of Ireland. The aim of the IAI, through the representation of our members, is to advance and strengthen the profession of archaeology in Ireland and membership is open to professional archaeologists working in either Ireland or Northern Ireland. The IAI’s cross-border agenda necessitates engagement with two legislative frameworks as well as two curatorial bodies and a range of interested cross-border groups.

The archaeological profession in Ireland suffered a substantial setback during the recent economic recession. As the economic slump began to impact on the development sector, archaeologists were amongst the first in the chain of pre-development workers to feel the downturn, with loss of projects, employment and wage decreases. Since 2008, the IAI has consistently tried to maintain professional standards amongst our workforce by holding regular Continuous Professional Development (CPD) events which reflects our core principles. The Institute maintains that a vibrant and sustainable archaeological profession actively contributes to the protection of our rich archaeological resource, which in turn contributes to the social and economic well-being of the entire community, driving tourism, social cohesion and local pride. To achieve our aim and vision, we are committed to a range of long-term measures, one of which includes the facilitation of CPD for our members and for non-members. CPD activity is monitored annually by the IAI via an easy-to-use CPD Record.

Over the last year the IAI has:
- Produced and funded our regular annual Journal of Irish Archaeology and bi-annual newsletters
- Hosted and organised a variety of CPD events
- In addition to our own Annual Conferences, the IAI held our 3rd annual Archaeofest heritage outreach event for the public in the centre of Dublin, which celebrated the work of archaeologists across Ireland and Northern Ireland
- Represented our members views to government and public agencies
- Supported and been a key partner in the all-island Archaeology 2025 strategy review of the archaeology sector
- Initiated an internal strategic three-year plan for the Institute
- Produced and funded our regular annual Journal of Irish Archaeology and bi-annual newsletters
- Hosted and organised a variety of CPD events

TH6-17 Abstract 02
Professional archaeology without borders

Author - Peter, Hinton, Chartered Institute of Archaeologists, Reading, United Kingdom (Presenting author)
Co-author(s) - Wait, Gerry, Chartered Institute of Archaeologists, Reading, United Kingdom

Keywords: Association, CIA, Professional

Presentation Preference: Oral

Archaeology should be without borders, and professional archaeology must be without borders. Professionalism depends on an individual’s commitment and accountability to an ethical code, and that involves more than just complying with relevant national legislation. The professional is therefore an international phenomenon. In many disciplines, professional institutes have members in many countries – and professional bodies are either multinational or work in strategic partnerships across frontiers.

Archaeology is no different. Over the last year, the Chartered Institute for Archaeologists has been in discussion with other professional associations for archaeologists and other organisations with an interest in professionalism. This paper will report on some of the ideas and plans, and will ask session participants what they would like to see.

TH6-17 Abstract 03
Professionalising archaeology in Europe – 2016: a year of progress

Author - Dr. Wait, Gerry, Witney, United Kingdom (Presenting author)
Co-author(s) - Hinton, Peter, Chartered Institute for Archaeologists, Reading, United Kingdom

Keywords: Archaeologists, Foresight and Horizon Scanning: the future of the Partnerships, Professional associations

Presentation Preference: Oral

Do people join organisations as members anymore? Or do they support campaigns and movements on a topic-by-topic basis, depending on electronic media to collaborate? If present social trends continue, membership of associations generally will continue to fall, with many either running out of money and ceasing to be effective and influential, or urgently needing to find new purposes. Professional associations are different; probably because membership is the price of professional recognition.

Since the EAA meeting in Glasgow in 2015, the Chartered Institute for Archaeologists has been in discussion with professional associations for archaeologists in Europe and beyond, and other organisations that have identified a need for a professional association for archaeology in their country. This paper will report on some of the models for cooperation, collaboration or formal partnership under consideration, and will explore both the opportunities and difficulties of professionalising across borders. Subject to the meeting organisers’ timetable, CIA hopes to be able to invite participants in this session to an informal reception at which stronger partnerships can be made.
Following the Brexit referendum, and the development of trends towards criticism of the ‘European (union) Project’, the Executive Board of the EAA decided it must create time at the Vilnius Annual Meeting for a Round Table. The Round Table will discuss and examine the potential impacts of the Brexit vote for European archaeology, for EAA members generally and especially for our UK colleagues, whom we always hold in the highest regard.

We felt that urgent reflection on this matter was required, because it directly affects the EAA profile and its founding principles. The idea is not to precipitate or hurry. We need to pause, reflect and to look forward with confidence. Remembering that all societies are composed of individuals and what they create, it is a time to bring to mind that inclusivity, solidarity and friendship build understanding and trust. Trust encourages integration and unity of purpose.

One of the main focuses of the Round Table will address how we can foster cooperation, define how cooperation can strengthen links and create supportive networks and define how those links and networks can produce enduring engagement and achievement. Archaeologists generally, and especially those within the EAA, have demonstrated a significant capacity to work creatively across borders and archaeologists (our members) have demonstrated the great value of fostering international, open endeavor and communities. We in the EAA are even more committed to this focus now. We will maintain our enthusiasm for imagining a more inclusive, solidarity and stronger Europe and a more representative EAA in that context.

The aim of the Round Table will be to make room for the collective consideration of how EAA should react and respond. Discussion will aim to define how to position the EAA in this new and complex cultural, social and political environment, recognizing that recent events in the UK are reflective of more widespread processes in European societies that we must recognize. This is a moment when an organization such as ours needs to establish and align its position with clarity, drawing on the very significant intellectual capital of its members. We look forward to this important discussion at Vilnius. We look forward to keep our founding European projection in this challenging time.

Because of the immediacy of the decision to hold this Round Table, we are still organizing its format and speakers. However, we want to stress that everyone is welcome and we hope that members will contribute actively to the discussion. The EAA must be open to aid archaeological analysis...
Any scientific study requires data from outside the researcher's precise field of work. Archaeology amongst the scientific disciplines most frequently calling upon a multitude of other disciplines, both scientific ones and crafts. In this way, zoology has enabled archaeology to consider skeletal remains through a different light in archaeozoology; botany has enabled the use of plants and pollen in analyses; and experimental testing has improved through contact with various craftspeople. The same interdisciplinarity has been applied to images with the iconological approach. This has created an approach involving identification using biological, geographical and chronological criteria, integration of dimensions such as ethology (animal behavior) into image comprehension, and classical and logical description.

This presentation shows how iconology can be useful to archaeology through examples covering:
- Canine farming techniques in pre-pharaonic times in Egypt from the 5th millennium BCE and suckle farming in the Middle-East during the 1st millennium BCE.
- 'Technicians' (farmers') movement between the Middle-East and Egypt during the 5th millennium BCE.
- The use of animals by political and religious powers and communities of craftspeople in the Bronze Age using feline and bovine analysis.

GS Abstract 04

Natural factors in early metallurgical production in Egypt and southern Levant

Author - MA Blabotzacka, Daria, Jagiellonian University in Cracow, Cracow, Poland (Presenting author)

Keywords: copper metallurgy, Egypt and southern Levant, environment

Presentation Preference - Oral

The origins of copper metallurgy in ancient Egypt and southern Levant is a subject which always has been in the scope of scientific interest. According to current knowledge it may be traced back to the Chalcolithic period and the Early Bronze Age. In the past, many scientists have put great effort to recreate its general picture. Recently more data has been gained which is useful in reconstructing this branch of craft. In the light of evidences objects made from copper might have been considered by ancient socioecies as one of the most valuable goods. Moreover, it can not be ruled out that this material might have special symbolic meaning.

Undoubtedly, environmental conditions played an essential role in shaping the picture of mining and metallurgical activities. They were responsible for the way ancient communities organized particular stages of metallurgical production. Due to similar landscape features the same pattern of production has been formed in areas of Egypt and southern Levant.

This paper should shed light on the subject of the beginning of copper metallurgy during the Chalcolithic period and the Early Bronze Age in areas of Egypt and southern Levant. Importance of crucial natural factors which determined evolution of mentioned craft as well as particularstages of production which depended on them will be presented.

GS Abstract 05

Mosaics of Ulpiana

Author - Assoc. Prof. Dr. GETIKAYA, Halki, Mimar Sinan Fine Arts University Istanbul, Istanbul, Turkey (Presenting author)

Keywords: Early Christanity, Mosaics, Roman

Presentation Preference - Oral

Archaeological excavations of Ulpiana began in 1953 and continued with intervals in the following decades. During these excavations, trapezoidal city walls and gates on it; cemeteries in North and West; urban villas and simple houses; workshops; military installation outside the city; three Early Christian churches and a baptistery were discovered. During early years of excavations, mosaics were discovered at two different locations. At the church on the Northern cemetery and a Roman villa. The latter is believed to be a church by some scholars. In 2012 excavations under my direction brought out to light an Early Christian baptistery. It was followed by the discovery of the main church of the city, most probably dedicated to the Saints Florus and Laurus, who were martyred at Ulpiana. Inside this church mosaics were discovered in 2013. They were unearthed until 2015.

Other than the newest series of excavations, dressing of the mosaic discovered earlier at Ulpiana is unknown. This work intends to shed light on all the mosaics discovered at Ulpiana and compare them in style, material and technique. All the mosaics have geometrical patterns. The only exception is the three bird figures. Dedictory inscriptions in Latin were found in the church on Northern cemetery and church of Saints Florus and Laurus. Limited colour scheme on tesserae and only a handful patterns may be taken as an indication of local workshop. In order to support this theory, laboratory analysis were made on the tesserae found in the latest series of excavations. Mosaics, which were discovered in early years of excavations are dated in 5th-7th centuries. But, with the help of technical analysis and sources it may be safe to assume that all of the mosaics discovered in Ulpiana were made in mid-4th century. Comparison of mosaics regionally and globally may provide further information on similarities and differences in technique and choice of patterns. By doing so we may obtain data which could help us understand movement of workforce and popular design and techniques. Our work is the first step of our larger project, namely, Corpus of mosaics of Kosovo.

GS Abstract 06

Calculated Harmony

Author - Richter, Éva, Budapest, Hungary (Presenting author)

Keywords: geometrical evolution system, pattern-family, plaiting, form creation, mathematical thinking

Presentation Preference - Oral

Evolution system of a geometrical pattern group which includes the earliest motifs and symbols of the cultural history

In the end of the Upper Paleolithic a basic geometrical pattern-family was born. It can be originated back to the plating basketry technique and has been surviving up to the present. The earliest motifs and religious symbols, such as chevron, checker board, hombosi and the forms based on meander hook (meander and swastika) belong to this pattern-group. Each can be found in the European Neolithic cultures in different proportions and is presented in varied style. The extensiveness spread of this pattern-family due to the geometrical rules of plating technology, and the cognitive processes of human brain. The both together resulted and determined the development of the same patterns in different cultures regardless of their location and their historical age. The rules of this technology are based on the laws of symmetry. The development of these patterns can be demonstrated within an evolution system, in which the particular patterns were born from a single basic structure step by step by little structural changes. In this universal pattern-family geometric form creation is based on counting, so the manifestation of mathematical thinking can be undoubtedly observed.

GS Abstract 07

Celtic cart graves from Brežice

Author - Murko, Mija, Institute for the Protection of Cultural Heritage of Slovenia, Ljubljana, Slovenia (Presenting author)

Co-author(s) - Beach, Uroš, Institute for the Protection of Cultural Heritage of Slovenia, Novo mesto, Slovenia

Co-author(s) - Nadin, Barbara, Institute for the Protection of Cultural Heritage of Slovenia, Ljubljana, Slovenia

Co-author(s) - Carne, Mija, Institute for the Protection of Cultural Heritage of Slovenia, Ljubljana, Slovenia

Keywords: Brežice (southern Slovenia), celtic cart, late Iron Age cemetery

Presentation Preference - Poster

In the vicinity of city Brežice (southern Slovenia) Centre for the Protection of Cultural Heritage of Slovenia, Centre for Preventive Archaeological research is carrying out a large-scale archaeological projects new Hydropower plant is being built on the Sava River. A number of archaeological sites are under threat of being destroyed by different infrastructural building works and by flooding of huge areas in order to make the accumulation lake. Archaeological research of the area, started in 2008, is still not finished.

During the last third of 2014 and the first half of 2015, a part of late Iron Age cemetery had been excavated. Archaeological excavations took place in the area of a previously known archaeological site of Brežice - Sejmišče (Fairgrounds).

The site is well known in Slovenia and is renowned for its wealthy grave inventory, especially weapons and parts of Celtic uniaxial cart that were found in the graves. Investigations of the archaeological site began in 1948 when during building works for a new veterinary station some parts of weapons and late iron age pottery were found. Later more graves were identified during various infrastructural ground works. In 1981 first methodological archaeological investigations of the site begun under the supervision of Milja Guštin (first archaeologist curator in Posavsk museum in Brežice). During 1982 and he tied excavated 58 graves. In 1997, another 10 graves were excavated west of the veterinary station. Until 2014/2015 excavation all together 73 graves were identified in cemetery.

Archaeological excavations in 2014/2015 identified 37 new graves. All 37 of them were cremation graves (the same as 73 previously excavated). Only 9 graves were preserved intact, majority of them were partly or totally destroyed by modern interventions, 17 graves were just partly disturbed as all the grave goods were found in situ and others were preserved in fragments. Graves were simple burials pits, without constructions made from stone or wood. Burial pits contained different grave goods, such as: ceramic vessels, iron weapons, fibulae, glass beads, rings etc. Grave 36 contained parts of cart represented as crushed (during burial rite) iron wheel alloy.

Chronologically, the graves can be dated in Middle and Late La Tene period (Lt C, D). Majority of metal artefacts are still undergoing conservation process, thus final chronological and typological evaluation and interpretation of excavated artefacts will be done after all the conservation works finished.

GS General Session 06

Celtic cart graves from Brežice
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Note: The table above lists some of the names mentioned in the provided text.
Wittchen, Dennis TH5-06
Wolfs, Katarina TH2-19
Wolkernann, Gisela TH1-18
Woulfers, Barbora TH1-11, TH5-02
Wright, Deni TH2-04
Wright, Holly TH5-03
Wright, James TH2-01
Wronicki, Piotr TH4-02, TH5-06
Wuff, Sabine TH5-14
Wunderlich, Maria TH3-09
X
Xunro, Ayan TH2-21, TH6-15
Y
Yalman, Emine Nurcan TH1-34, TH3-07
Yale, Ana TH2-02
Yartsev, S. V. TH5-13
Yerkes, Richard W. TH1-34
Young, Christopher TH2-06, TH5-16
Z
Zabielia, Gintautas TH4-02
Zachar, Jan TH2-07
Zagorska, Iga TH4-07
Zacevka, Ganna TH6-11
Zaleska, Anna TH2-21, TH5-06
Zaltsman, Edvin TH4-08
Zammit, Maria Elena TH5-10
Zampetti, D. TH1-04
Zapolska, Anna TH4-12
Zarina, Gunia TH4-07, TH4-11
Zarina, Liqa TH1-16, TH5-01
Zavodny, Emily TH5-13
Zaytseva, Irina TH1-12, TH1-20
Zelenkova, Olga TH2-10
Zeman, Piotr TH3-08
Zhadin, Mikhail TH1-30
Zhina, Natalia TH1-12
Zilius, Agne TH4-04
Zimler, Daniel TH5-05
Zinny, Marcellina TH5-14
Zinti, Stephanie TH1-27
Živaijović, Ivana TH1-10, TH1-20
Zobkov, Mikhail TH1-04
Zolaga, Gudry TH1-28, TH3-13
Zubarev, V. G. TH5-13
Zubova, Alisa TH1-11
Zubrow, Ezra TH1-34, TH3-14, TH5-02
Zuckerman TH5-02
Žukas, Vidas TH5-13
Zupanski, Bernarda TH1-14, TH3-20
Zych, Renata TH3-10

FOR NOTES