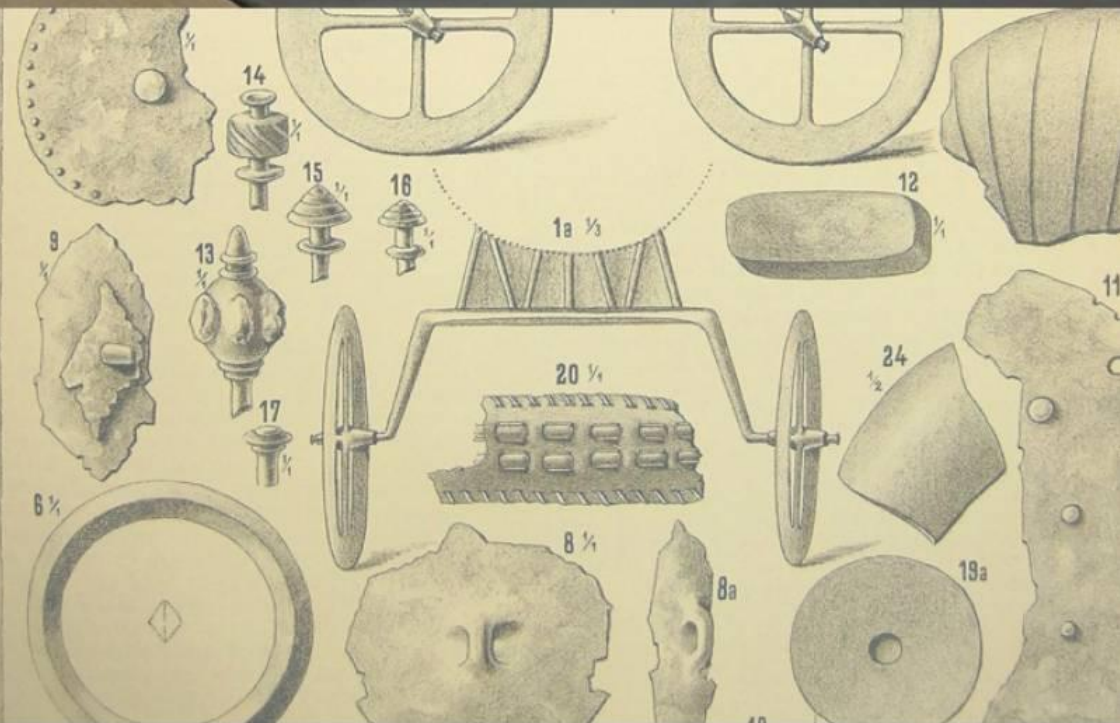


# ABSTRACTS

19<sup>th</sup> Annual Meeting of the European Association of Archaeologists  
2013 Pilsen | Czech Republic





## Foreword

It is a great pleasure for me to have the possibility to introduce to the participants of the EAA 19<sup>th</sup> Annual Meeting (AM) perhaps the most important set of data connected with this event. The Abstract Book brings summaries of all the works submitted either in the form of paper or poster presentations by most of you. It is obviously the academic programme of a conference of this category which clearly indicates the way which archaeology in current Europe follows. Although the principal directions in the development of a discipline can properly be evaluated in the course of decades rather than individual years, there is a traceable variety of streams inside the sessions of this-year EAA AM framed into six thematic groups.

As you can see in this Abstracts Book the total number of sessions and papers submitted by applicants and accepted by the 2013 Annual Meeting's Scientific Committee in cooperation with session organizers exceeds apparently their numbers in past years. For the Local Organizing Committee and Scientific Committee this was very surprising and challenging situation, as we had to carefully go through the decision-making process when evaluating every submission. It was a positive finding that just a few sessions and papers (almost no poster) had to be declined. Anyway, it is now up to you to consider what the level of submitted papers/posters is about. Obviously, the quality of this congress (let me use this term due to the high number of participants) will be dependent first of all on the quality of papers, on how professionally you will be able to present your projects and discuss their results and conceptions with your colleagues. I am almost sure that most papers are valuable, have the potential to contribute to the success of the congress and to indicate what, generally speaking, current archaeology through its variety is about.

Let me wish you to spend a nice time in Pilsen, to enjoy your visits of sessions you expect to attract you most, and to achieve a feeling that your own paper or poster presentations have contributed to the – hopefully high – level of the 2013 EAA Annual Meeting.

**Martin Gojda**

Chair of the Scientific Committee  
EAA 19<sup>th</sup> Annual Meeting 2013 Pilsen

## Preface by the editor

This year is the Annual Meeting of the European Association of Archaeologists coming to the centre of Europe, to the region of West Bohemia and City of Pilsen.

The Pilsner basin is a lowland territory with tradition of continuous human settlement since the time of first farmers around the mid-6<sup>th</sup> Millennium BC. The forests surrounding Pilsen and in south-west Bohemia are hiding several Copper Age hill top sites, numerous barrow cemeteries of the middle/late Bronze Age and Hallstatt Period. The early medieval hill-forts are predecessors of the high medieval towns, such as Starý Plzenec (the Old Pilsen, founded in 10<sup>th</sup> century AD for Pilsen (founded in 1295). The spectacular remains of the medieval City underground produced also incredibly rich data for reconstruction of the life of Pilsner burghers in high and late Middle Ages.

It is, however, not only the past that Pilsen can offer. The tradition of archaeological research in the region started already by forest survey and excavations of F. X. Franz (1838–1910) followed by Václav Čtrnáct (1884–1975), Marie Doubová (1912) and Antonín Beneš (1934–2011). Thanks to the long tradition of archaeological research and especially the booming development of Pilsner archaeology in the last decades, the City offers highly influential intellectual environment with solid foundations in both theoretical, as well as, heritage archaeology.

The Department of Archaeology at the University of West Bohemia is currently the national largest university centre for archaeological studies. It was founded by Professor Evžen Neustupný in 1998 and since then it represents a high profile institution of national and international impact. Neustupný established a fundamental paradigmatic profile of the Department that was always in contact with developments in Western archaeological theory. Amongst the main topics of his paradigm are: Settlement area theory, Theory of archaeological transformations, Archaeology of otherness etc. As the first Head of the Pilsen Department of Archaeology he was always dealing with the key issues of theoretical archaeology and using the most advanced methods of research, and profoundly influenced a new generation of Czech archaeologists. Currently he continues to supervise and teach students, just as he continues to publish influential papers and books on archaeological method (Method of Archaeology, 2007) and theory (Theory of Archaeology 2010). It is symbolic that the EAA Annual Meeting is taking place in Pilsen, the City of Neustupný's childhood and University career as he was also amongst the scholars who in 1993 founded the European Association of Archaeologists.

Besides the regular EAA main themes: Interpreting the Archaeological Record; Archaeological Heritage Resource Management and Archaeological Science the EAA 2013 Scientific Committee introduced three new themes: Theory and paradigms in Archaeology; Public Archaeology; and Archaeology of food and drink. These themes reflect some of the current trends in European archaeology and research interests of the local archaeological community. Great importance is also given to the non-invasive methods of fieldwork, the conception of archaeological sources in their wider spatial context and towards the extensive interdisciplinary work and employment of natural sciences.

The Pilsen Annual Meeting has grown into an unprecedentedly huge congress with over 1050 papers and 280 poster presentations. All this places a great demand on both the preparation of academic program and logistical organization of the congress. On this occasion I would like to thank the whole Organizing Team and Scientific Committee for the hard work in the implementation of this extraordinary scientific event.

We sincerely hope that your memories of the EAA Annual Meeting in Pilsen will not only include the beautiful natural and historical monuments of the region and the world-famous highest quality beer but mainly the remarkable scientific experience, inspiration and new friendships.

Enjoy the Pilsen 2013!

**Jan Turek**

Secretary of the EAA 2013 Scientific Committee

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## Annual Meeting Emblem



### The Bronze Age shield of Sun and Crescent

*Jan Turek & Marion Uckelmann*

The true pride and enigma of the West Bohemian archaeology is the bronze shield from Pilsen Jíkalka, a copy of which is kindly loaned by the Museum of West Bohemia (MWB) and can be seen in the foyer of Building 1 at the University Campus – Bory. The original artefact is on display in the recently-opened main exhibition in the MWB. There are many yet unsolved questions about the Jíkalka shield, such as its precise date, its profane and sacred context and the symbolic meaning of its decoration. The shield represents an important artefact of social and cosmological significance connecting European Bronze Age communities from Ireland to the Near East. It is also presented as the main logo of the 19<sup>th</sup> EAA Annual Meeting.

#### Discovery

It was found in 1896 during the house construction on the then outskirts of Pilsen (near the present day Bus Station) right next to another early Urnfield (Reinecke B C2 / B D) hoard that became eponymous for the Plzeň Jíkalka horizon of hoard deposits (Kytlicová 1986). The shield belongs to the group of Herzsprung type shields (named after 1844 discovery at Herzsprung in Brandenburg region).

#### Style and Distribution

With the end of the Middle Bronze Age and the beginning of the Late Bronze Age, shields made of a single piece of bronze sheet come into use. About 86 of these metal shields are recorded from all over Europe, as well as two wooden and one leather shields and two wooden shield formers from Irish bogs. The main distribution is in the British Isles and Ireland, followed by a larger group in southern Scandinavia and more scattered finds from Germany, Poland, Czech Republic and the Carpathian basin but in similar forms known in depictions as far as in southwest of the Iberian Peninsula in the west and Cyprus and Assyria in the east.

Original round shields of organic material were part of the Atlantic warrior panoply already since the mid Second Millennium BC. The Herzsprung type probably developed in Iberia and Ireland and spread eastwards between 1300–900 BC.

Marion Uckelmann (2012, 73 ff., nos. 86.–88.) classified the find as belonging to the Plzeň group, which is closely related to the Herzsprung type of shields characterised by similar decorative motifs on the three currently known shields. Another two shields are unprovenanced, but come most likely from Denmark. The shields are of oval form, and through decoration related to the Herzsprung Type. The diameters are between 51 × 48 cm and 68 × 61 cm. The metal thickness is 1–1.3 mm which explains the relatively heavy weight of 2.4–3.4 kg for the shields. The integrating element in the decoration with the shield from Pilsen is the circular notch in the central shield boss, the rest of the shield body is rather plain, and adorned only with ribs or boss rows. The handle and tabs are all fitted in different ways. The Plzeň-Jíkalka shield shows at least in this aspect some resemblance to the Nipperwiese Type shields. The U-notch of the Jíkalka shield creates a very specific, almost crescent shape, similar to that of the horseshoe/crescent-like razors of the Urnfield period. It may be well possible that the shaping of both artefacts has something to do with the representation of the Moon and its role in the Bronze Age Cosmology (cf. the Nebra Disc).

## Chronology

The dating of the shields was till recently quite problematic, since most of them are isolated finds or they were found in association only with other shields. The fragments of shields found in the Carpathian hoards are well dated through their associations and belong to the 13<sup>th</sup> century BC (BzD/HaA1/2). A late date of such shield comes from a hoard in Skydebjerg, Denmark (Period V. c. 925–800 BC), where a fragment of a Type Herzsprung shield was found, but it seems most likely that this piece was deposited already old. The close resemblance with some of the shield images on the Iberian stelae and the early dating of the Irish organic shields (with new dates: eg Uckelmann 2012, 158 ff. Fig. 27) make it possible that the Type Herzsprung origins are as early as the late 13<sup>th</sup> century BC. The long discussion on the Plzeň-Jíkalka shield can now be seen as resolved since a new radiocarbon determinations for the shield (from pieces of wood in the bronze handle) dates it to: 1387–1127calBC (GR-40666: 3005±40BP). This suggests a position near the beginning of metal shield production, as its form and technology might also imply (Uckelmann 2012, no. 86). Combined with the evidence of the Carpathian hoard associations, it therefore appears that the small number of metal shields known from Central Europe belong somewhere within the mid-14<sup>th</sup> to mid-11<sup>th</sup> centuries BC, essentially the earlier half of the Urnfield period.

## Interpretation

The evidence of Iberian rock art emphasizes the ritual and social meaning of shields in the warriors' symbolism (Harrison 2004; 124–134). Some shields are so thin and delicate that they could hardly be used as defensive armour, some other exemplars are more substantial and the show clear lozenge-shaped perforations made by a weapon and perhaps inflicted in a combat. Such symbolism may be connected with ceremonial warfare as it is presumed for the early prehistoric society (Neustupný 1998, 27–30). But some of the shields clearly were used in combat and were able to protect the bearer. One of those shields was the heavy shield from Pilsen even though it does not show weapon inflicted damage.

The decoration motifs and shape of shields are related to the Sun and Moon symbolism that was the centre point of European Bronze Age cosmology (Kristiansen – Larson 2005).

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**Author of the emblem graphics:** Hana Ovesleová, University of West Bohemia in Pilsen

## Session schedule

Thursday, 5 September 2013

ROOM	8:30–10:30	11:00–13:00	14:00–16:00	16:30–18:30
1 EP 130	When the potters make the story: what can pottery tell us about the people who made and used it? (A46)			
2 EP 120	Some Assembly Required: Assembling People, Objects, Discourses, and Landscapes in Archaeology (A35)			
3 UP 108	New digital developments in heritage management and research (B13)			
4 EP 110	Built environments and human use of space: theories, methods and case studies (A07)			Humanity and Creation (C07)
5 EP 208	Bodies of Clay – On prehistoric humanized pottery (A06)			
6 UP 101	Thinking about health and diseases in archaeology (A39)			Where east meets west: the impact of the Mongol invasions on the landscapes of Central and Eastern Europe – integrating science, archaeology and history (F09)
7 UP 104	Social dimension of burial mounds (A34)	Cold War in Context: Excavating the Contemporary World (A10)		
8 UU 108	Archaeology of religion: methodological issues (C02)			The use and perception of caves and rock shelters in Early Medieval Europe (400–1200 AD) (A43)
9 UU 407	Public Archaeology from the Ground Up (Round Table D04)	Persistent economic ways of living – Production, Distribution, and Consumption in the Iron Age and Early Medieval Period (A31)		
10 EP 206	Something out of the ordinary? Interpreting the diversity in the uniformity of the Early Neolithic LBK in Central and Western Europe (A36)			The roles and benefits of professional associations in Europe and beyond (B14)
11 UU 307	Collapse and regeneration of past societies (C04)	Deciphering agricultural footprints: New multidisciplinary studies of human-environment interactions (F02)		
12 UP 115	East-West: the role of Central Europe in the Iron Age (A14)	Gendered violence in the past: Materialities and corporealities (A19)		
13 UU 405	Indigenous Communities in Conquered Landscapes (A21)	Interregional contacts during the first millennium B. C. in the Europe (A22)		
14 EU 102	Animal utilized, processed, depicted: large mammal exploitation by prehistoric hunter-gatherers (A02)	Mesolithic survivals: Origins and perpetuation of wild resource use (E04)		
15 EU 104	Fortified settlements of the 7 <sup>th</sup> –10 <sup>th</sup> centuries AD in different regions of Europe (A16)			
16 EU 106	New Perspectives on Lithic Scatters and Landscapes: Different scales, different approaches? (A27)	Barrow Landscapes and GIS approaches (A05)		
17 EU 108	What should a PhD in Archaeology be all about? (A45)	Meat as food, offering and identity (E02)		
18 EU 109	Archaeological Sites in Forests – Strategies for their Protection (B02)	Identity and Heritage: Contemporary Challenges in a Globalizing World (B09)		



## Friday, 6 September 2013

ROOM	8:30–10:30	11:00–13:00	14:00–16:00	16:30–18:30
1 EP 130	Children in the Prehistorica and Historical Societies (A09)			
2 EP 120	Landscapes of complexity in Bronze Age central Europe (A23)			
3 UP 108	General session (G02)			
4 EP 110	Archaeological aspects of shamanism: iconography, artefacts, technology, and spiritual landscapes (A03)			
5 EP 208	Managing lithic tools: The contribution of technological and functional studies to the understanding of stone tool management during the Neolithic (A25)		Testing time: new approaches to archaeological chronologies, radiocarbon dating, and 14 C data (F07)	
6 UP 101	Archaeological Perspectives on the Thirty Years' War (A04)			Orders of knowledge. Disciplinary Powers in the Archaeological Discourse (Round Table C08)
7 UP 104				Mission accomplished – what may Archaeology expect from the new CAP after 2014? (Round Table B12)
8 UU 108	EAA Executive Board Sponsored session (F03)			
9 UU 407	Partners – Rivals – Enemies. Archaeological record of interaction between two differently structured entities and its interpretation variability (A30)			Archaeological Sites as Space for Modern Spiritual Practice (D01)
10 EP 206	Creating Landscape Visions: managing the past while imagining the future (B06)		Archaeology meets modern art: artists' approaches to prehistoric data (D02)	
11 UU 307	Biography and Histories of Archaeology: present state and future scopes (C03)		Gender identities in the making – prehistoric dress and network patterns in a supraregional perspective (A18)	
12 UP 115	Comparative Perspectives on Paleolithic Socioecodynamics (A12)		Garbage and (Non)humans (A17)	
13 UU 405	Studies on settlement archaeology in the eastern area of distribution of the Bandkeramic (A37)		Salt of the Earth: an invisible past in European Archaeology (E05)	
14 EU 102	The Archaeology and Heritage of the Prisoner of War experience: researching and managing a fragile resource (B05)		Digital heritage: cross cultural conversations or nationally embedded soliloquies? (D03)	
15 EU 104	Taking on the transition: new perspectives on continuity and change between the Late Bronze Age and Iron Age in Europe (A38)		Stuff or words? The interdisciplinary study of Medieval Material Culture, a theoretical debate (C09)	
16 EU 106	The life of lithic tools in the palaeolithic: Identification and interpretation (A24)		Far From the Madding Crowd – Interpreting the Ephemeral Evidence for Rural Life (Round Table A15)	
17 EU 108	Outstanding Biographies: The Life of Prehistoric Monuments in Iron Age, Roman and Medieval Europe (A29)		Medieval and early modern glass as seen through the context of dining (E03)	
18 EU 109	Heritage Issues in Europe's Historic Cities (B08)		The bioarchaeology of the neolithic Carpathian Basin (F01)	

## Saturday, 7 September 2013

ROOM	8:30–10:30	11:00–13:00	14:00–16:00	16:30–18:30
1 EP 130	Deliberate fragmentation revisited. Assessing social and material agency in the archaeological record (A13)			
2 EP 120	EAA Student Session (G01)			
3 UP 108	What's for Dinner?: Archaeological evidence of food production and consumption (E06)			Gender in flux (C06)
4 EP 110	An Archaeologist at the Centre of Europe: A Symposium in Honour of Evžen Neustupný (C01)		Towards new horizons. Advances in provenance methods and their repercussions in archaeology (F08)	
5 EP 208	4000 years of world career – amber from the Neolithic to Iron Age (A01)			
6 UP 101	Examining Social Complexity within Bronze Age Steppe Societies (C05)			
7 UP 104	Comparative Perspectives on Hunter–Gatherer Archaeology of Northeast Eurasia (A11)			
8 UU 108	What is Changing and When – Post-LBK Life in Central Europe (A44)		Adding technology: the multidisciplinary study of historical buildings (B01)	
9 UU 407	“Transversal World” – Focus on the Early Middle Ages in Central Europe (ca AD 600–1050) (A41)		Iron and change in Europe the first 2000 years (F05)	
10 EP 206	The many faces of gravettian (A26)			Towards a real representation and interpretation of spatio-temporal data in Archaeological Record (A40)
11 UU 307	Transfer of Knowledge in Archaeology (C10)		Sediment stratigraphy as the record of human impact (F06)	
12 UP 115	Discovering the Archaeologists of Europe ... and of the World (Round Table B07)		Relative vs. Absolute Chronology of the Neolithic of the Carpathian Basin and South Eastern Europe (A32)	
13 UU 405	Social archaeology of death in the Roman world: new data and perspectives (A33)		Geophysics in the studies of late Prehistory (A20)	
14 EU 102	Nobility versus artisans? The multiple identities of elites and ‘commoners’ viewed through the lens of materials and technologies during the European Bronze and the Iron Ages (A28)		Human DNA and Archaeology (F04)	
15 EU 104	Integrating non-destructive methods of archaeological resources prospection: implications for research and protection (B10)		Archaeology and cultural heritage during and after armed conflict (B03)	
16 EU 106	Unexplained archaeological off-site features (A42)		Chains of Citation: re-contextualization in the Viking Age (A08)	
17 EU 108	Methodology in Preventive Archaeology: Mechanization in evaluations and excavations (B11)		Archaeology and heritage management in Europe after two decades of the Valletta convention (Round Table B04)	
18 EU 109	Integrated novel applications for dietary reconstructions in prehistory (E01)			

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# A: Interpreting the Archaeological Record

## Session A01

### 4000 years of world career – amber from the Neolithic to Iron Age

Saturday, 7 September 2013, 08:30–18:30

Room: EP 208 (Building 1, 1st floor)

**Organisers:** Janusz Czebreszuk (Adam Mickiewicz University in Poznań, Poland), Mateusz Jaeger (Adam Mickiewicz University in Poznań, Poland) and Aleksandar Palavestra (University of Belgrade, Serbia)

It is well known that amber was an extremely important raw material distributed over vast areas of prehistoric Europe. Amber deposits of varying richness are found practically in all regions of the Old World. From the point of view of cultural significance, however, sources stretching along the southern Baltic coastland were the most important. Succinite extracted in Jutlandian and Sambian centers dominated Neolithic and Metal Ages trade. Throughout the centuries a dense network of amber distribution in Europe was developed.

The aim of the planned session is to summarise the state of research on prehistoric amber and to spell out the most significant scientific questions for the near future. We hope to integrate specialists from different sciences working on prehistoric amber.

#### A01.01: Amber from the Single Grave Culture

by Palle Siemen (*Sydvestjyske Museer, Denmark*)

Amber is well known from the graves in the Single Grave Culture of Jutland (app. 2900–2400 B.C.) and together with battle axes and pottery it forms the most characteristic material elements of this specific culture, although abundant in artifacts it is very uniform in expression. The quantity and variation of amber in the graves cannot be accidental but must be the last phase in a series of different incidents such as collection, work up, distribution and use. The material consists of single pendants, string of beads, trimming, discs and rings, which are used in different ways in the social system. The paper will discuss the different phases the amber passes from sea to the grave where some such as collection and work design demands certain knowledge and skill of the local people, other a system of exchange and conventions about use and deposition.

#### A01.02: Amber finds from Stone Age sites in the Vologda region, Northwest Russia

by Nadezhda Nedomolkina (*Vologda State Museum, Russian Federation*)

In the Vologda region in the forest zone of North-Eastern Europe, amber artifacts have been found on ten archaeological monuments. The collection of amber finds from funerary complexes have more objects, while the finds found in the settlements rare and singular. All amber objects can be divided into four types: pendants, rings, disk and beads, which include buttons. The sites where amber objects came to light in the Vologda region date back to the third millennium BC and correspond to the porous ceramic complex of the Volosovo culture. All amber finds from the Vologda region belong to the group of Eastern Baltic amber jewelry. Sets of amber artifacts indicate, that at least at different times 3 large batches of amber reached the Vologda region from the Eastern Baltic sources which are situated approximately 1000 kilometers further west. The objects thus testify for long distance relations across the northern part of Eastern Europe in the Later Stone Age.

#### A01.03: Amber in the Bronze Age Societies in the East Baltic region

by Agnė Čivilytė (*Lithuanian Institute of History, Lithuania*)

Bronze Age in the eastern Baltic region began when the first imported goods appeared. The first wave of imported objects in the graves appear only in the middle Bronze Age in so called Sambian Barrow Culture graves. This phenomenon is traditionally explained by the intense amber trade, “the Sambian sphere of exchange.” The same situation was in the Late Bronze Age, when the local production of bronze has firmly established. The Barrow culture continued to be the dominant player of the trade network. However, it remains an open question how significant was amber to Bronze Age societies. Compared to the Late Neolithic, it looks like as though amber objects would have been altogether absent from human life in the Bronze Age. How to interpret the disappearance of amber from graves and hoards – is it related to the natural decrease in raw amber supply, or maybe amber was being saved, and it was tabu to put it to graves? This phenomenon reveals the relationship between raw materials and consumers in prehistoric societies. However is it

possible, by analyzing the spread of bronze objects in the Eastern Baltic region graves and hoards, to trace patterns of social change associated with the amber trade?

#### **A01.04: Archaeological Traces along the “Austro-Bohemian Amber Trail”**

by Henry Dosedla (*CINDIS – Center of Interdisciplinary Studies, Austria*)

Regarding the course of the trans-continental Amber Trail there is a marked separation into two different branches both crossing a Central European region of particular relevance for centuries during the historical development of the Czech Republic and Austria since they remained the basic traffic veins in later periods including the whole Middle Ages. Generally the eastern Moravian branch along the Morava river was considered as the main route and thus became well documented, whereas the western branch along the Vltava/Moldau river until recently was rather neglected by archaeological research. This applied the most to the section passing the vast Bohemian granite plateau between the Czech border and the Danube. Showing an apparent abundance of distinct sites of the Slavic period of which just a few have shortly been documented this fringe region finally is capable of becoming an increasing challenge of bilateral excavation activities.

#### **A01.05: Tears of the Sun: Amber Spacer Plates from Bronze Age Britain and Europe**

by Kate Verkooijen (*University of Exeter, UK*)

The amber spacers (*Bernsteinschiebers, plaquettes d'espacement*) are some of the most iconic artefacts of the European Bronze Age; not for their undoubted original beauty, but because of what they may be able to tell us about the cultural and chronological relationships between North-west and Central Europe and the Eastern Mediterranean during the 2nd millennium BC. In 1940 Merhart first drew attention to the similarities between the spacers found at Kakovatos in Mycenaean Greece with those from the Bavarian site of Asenkofen. He illustrated these beads, along with several others from the South German Tumulus Culture, demonstrating their variety of perforation patterns. Comparison of these patterns between the three regions has been at the heart of the interpretation of the relationships of these cultural areas and of the spacers themselves. However, the present condition of the amber means that it is difficult to determine these patterns with certainty. In 1993 Harding expressed the view that this situation could only be remedied by x-raying the beads. Obtaining these x-rays has been one focus of the speaker's recent PhD and she presents here the results of that research.

#### **A01.06: Amber in Czech Únětice (Aunjetitz) culture – on the origin of the Amber Route**

by Michal Ernée (*Institute of Archaeology, Academy of Sciences of the Czech Republic, Czech Republic*)

About 4,000 amber artefacts from more than 100 Early Bronze Age sites are known in Bohemia. The majority are cemeteries (82 %). Approximately 3,600 (90 %) of the amber artefacts were found in 304 graves at 87 cemeteries. These were beads with a simple hole (97.6 %), which were typically parts of necklaces. Also found were so-called “Schieber” or “Abstandhalter” (24 artefacts from 18 graves at 12 cemeteries), rings and disks, a button or amber as a part of a bronze dagger. The greatest concentration of finds is from central Bohemia. The richest grave (Mikulovice, no. 1963) contained more than 430 amber beads and six Bernsteinschieber. We date the vast majority of the finds to the classic Aunjetitz culture (ca. 2000–1800 BC). All analyses confirmed the Baltic origin of the amber. Bohemia is far richer in amber than all of the surrounding territories and was the main target area for amber trade in the Central Europe. If it is possible to speak of an “Amber Route” in the Early Bronze Age, it would have run from the Polish Baltic coast to Bohemia. The massive influx of amber into Bohemia stops abruptly with the end of the classic Aunjetitz culture.

#### **A01.07: Amber finds in Slovakia and cultural-territorial specifics of its occurrence in the Early and beginning of the Middle Bronze Age**

by Klára Marková (*Archeologický ústav SAV, Slovak Republic*)

Amber finds in Slovakia show general similarity, when it comes to their form, to those in Hungary and adjacent parts of Romania, as it is shown in present stage of research. The paper will point out formal/typological differences of those finds in comparison to amber items from neighbouring territories.



#### **A01.08: Between the Aegean and Baltic Seas – Amber in the Bronze Age Carpathian Basin**

by Mateusz Jaeger (Adam Mickiewicz University in Poznań, Poland)

It is broadly accepted opinion that amber was one of the most important raw materials circulating over vast territories of Bronze Age Europe. During the first half of the second millennium BC amber from the Baltic Sea has been extensively traded and reached the Aegean zone. Since decades spectacular finds of Otomani-Füzesabony culture in Slovakia and some other sites spread across Carpathian Basin are interpreted as evidence of contacts linking Central Europe with highly developed civilization of Mycenaean culture. The long-distance exchange was supposed to be a key factor in development of Carpathian Bronze Age societies. The author will try to discuss above mentioned hypothesis and show importance of other levels and directions of exchange and their role in forming the Carpathian Bronze Age.

#### **A01.09: Amber routes only? – to the memory of Curt W. Beck**

by Jan Bouzek (Charles University, Czech Republic)

Amber was valuable and admired substance in antiquity notably in areas distant from its natural outcome in the Baltic Sea, which until nowadays is its basic source. Several main amber routes were considered, the western over the Tin Islands notably for the Shaft Grave time, the best known Oder/Morava and along the Eastern Alps for LB and EIA, the eastern one between the Baltic and Black Seas. In 5<sup>th</sup> century BC the Central European Amber Route marked by southern imports moved to the west, but not completely. Gold and tin were of similar importance as amber (Herod. III, 115); salt and salted fish were commodities whose share in long-distance trade was much higher. Salt routes were apparently also used for amber, whose price and weight enabled, however, that one single porter with rucksack could carry a fortune even outside the main routes.

#### **A01.10: Adriatic branch of the amber road in the Bronze Age: current state of knowledge and research perspectives**

by Mateusz Cwaliński (Adam Mickiewicz University in Poznań, Poland)

The issue of succinite items import to the areas of Southern Europe has been the subject of an ongoing discourse among archaeologists for a long time. The result of this discussion is a number of concepts describing methods and routes of the aforementioned source inflow from the Baltic shore to the centers of Bronze Age civilizations located in Italy and Greece. Traditionally, these ways are called “amber routes” from which their over-Adriatic variant, in the opinion of many scholars, was the most important from the perspective of prehistory, as well as, historic times. The paper will give possibly the most complete description of current state of knowledge about Bronze Age amber finds from the areas surrounding Adriatic Sea. Attention will mainly be paid to the range and structure of the distribution of amber artifacts, as well as their context. Moreover typological variation of the products and their functional aspect will be discussed. With regard to all above mentioned elements current theories and interpretations developed by individual scholars will be presented. Finally, as the part of summary, research perspectives and possibilities will be discussed in order to help understand better the specifics of Adriatic amber route and events that it holds.

#### **A01.11: The North Aegean at the Crossroads: Patterns of Distribution for Amber and Other Valuable Objects**

by Magda Pieniżek (German Archaeological Institute, Turkey)

Without a doubt, amber counted among the most desirable luxury materials in the entire Aegean, throughout the 2<sup>nd</sup> millennium BC. Together with other exotica such as ostrich eggs, faience, and semi-precious stones, it formed an important part of chiefly graves during the time of the Shaft Graves. Its popularity among the Mycenaean elites was most likely due to its foreignness, as well as its special physical and aesthetic features. It is usually assumed that the importance of amber diminished gradually during the Bronze Age, and that by the time it reached the North Aegean in the 13<sup>th</sup>–11<sup>th</sup> century BC it had become less of a “luxury” and more widely accessible. Most of the previous studies on amber have concentrated on objects coming from the important southern Aegean centres. In this presentation I would like to focus on the problematic of amber in the North Aegean: I will look at its shapes, find contexts and patterns of distribution, and compare it with other important objects such as metal jewellery, glass and faience beads, or violin bow fibulae.

#### **A01.12: Amber in the Mycenaean culture. Some general remarks.**

by **Janusz Czebreszuk** (Adam Mickiewicz University in Poznań, Poland)

One of the features which distinguish the Mycenaean culture from other East-Mediterranean centers was the presence of amber in a great number of finds. Furthermore, basing on physic-chemical analysis, most of them were Baltic amber. Current level of our knowledge shows us that sources of Baltic amber are known from many regions (not only Baltic area), which are situated in the north comparing with Aegean. In the presentation the most important questions concerning presence of amber in Mycenaean culture will be discussed. From where did amber come to the culture? Other issues are: the typology of amber artifacts in the Mycenaean culture, its distribution in regions and dynamics of its appearance in Mycenaean world.

#### **A01.13: Late Bronze Age Amber Workshop in Campestrin (Veneto-Italy)**

by **Paolo Bellintani** (Ufficio beni archeologici della Provincia Autonoma di Trento, Italy), **Luciano Salzani** (Soprintendenza per i Beni Archeologici del Veneto, Italy), **Mariena Leis** (University of Ferrara, Italy), **Carmela Vaccaro** (University of Ferrara, Italy), **Ivana Angelini** (University of Padua, Italy), **Ursula Thun Hohenstein** (University of Ferrara, Italy)

The site of Campestrin, currently dated XIII-XII century b.c., was discovered in 2007, 10 km east from Frattesina. Thanks to early research carried out by L. Salzani in collaboration with the Museum of Grandi Fiumi, Rovigo, evidences of the most ancient amber processing workshop has been recovered south of the Alps and, at the present state of knowledge, in the whole Mediterranean Region. Preliminary excavations have revealed quadrangular beaten-soil platforms closed to an impressive quantity of sub-centimeter amber-waste. Among the artifacts, the presence of Tiryns beads, well-known markers of amber trade that linked northern Adriatic and the eastern Mediterranean, deserve to be highlighted. We report the preliminary results, carried out by means of scanning electron microscopy (SEM), aimed to recognize the processing traces and use-wear, on lumps with cortex, semi-finished products at various processing stages, finished products. A set of samples was selected for the infrared analyses (DRIFT) in order to investigate the amber provenience, comparing the data with an internal database of European amber. Micro-Raman and TGA analyses, were conducted with the aim to detect the presence of any residual metal or natural fibers used for the frame, and oily substances linked to polishing or use of ointments/balms.

#### **A01.14: From the Source – Amber Trading During the Early Iron Age**

by **Jutta Kneisel** (Christian-Albrechts-University of Kiel, Germany)

The Baltic coast is the richest source of amber. During the Early Iron Age, a shift between concentration of amber and imported finds seems to be changed. The site Komorowo (Poland) with a high amount of raw amber and the cemetery of Gorszewice (Poland) nearby with its imports of southern origin, seemed to play an important role in the amber trade during Ha C phase. This changed in Ha D period and domination of Pomeranian culture in the area around the Bay of Gdańsk. Even if amber rarely appears in the graves of the Pomeranian culture, the imports now also reach the coast (during Ha D-Lt A). Grave goods like cowry shell from the Pacific shows that the trade now reached the source and not any longer was an in-between trade. Further analysis of the ornamentation of lids from this culture show instead of clusters, linear distribution patterns, which reach over the Kashubian Lake land to the Baltic Sea. These lines could be interpret as trade routes and could be understand as the starting point of the amber routes.

#### **A01.15: Figured amber of pre-Roman Italy. A proposal for classification.**

by **Andrea Celestino Montanaro** (Consiglio Nazionale delle Ricerche, Italy)

The "Italic" amber, and those figured in particular, are a typical example of a class of materials for a long time considered minor and examined in isolation, just as a testimony of a subordinate taste compared to the great artistic tradition. Brought back to their archaeological and historical context, they reveal themselves instead increasingly as a constitutive element of a tissue of "luxury" production in the center of the social life of Italic peoples. In this perspective, the purpose of this paper is a re-interpretation of the problem concerning working of amber figured in terms of stylistic and typological studies, in the light of the latest finds, by proposing a classification useful to framework for the different productions.

### **A01.16: Amber finds from China**

by ***Marta Zuchowska*** (*University of Warsaw, Poland*)

Amber objects are relatively rare among other finds in China, however, quite a representative group of over one thousand such artefacts were found in the contexts related to the period up to the beginning of the 2<sup>nd</sup> millennium A.D. The earliest known amber bead from China is dated to the Shang dynasty (2<sup>nd</sup> millennium BC), but only during the reign of the Han (206 BC – AD 220) and Jin (AD 265–420) dynasties did such objects become more popular. Being made of imported raw materials, amber objects offer a unique opportunity to investigate the distribution patterns, exchange and communication networks and their changes in a long-term perspective. Amber finds from China are usually associated to the trade with Roman Empire, but chronological and geographical distribution of artefacts on the territory of present PRCh suggests that such explanation is far from being satisfactory.

### **POSTER**

#### **A01.01-P-3: Amber finds from the Bronze Age settlement of Roca (Lecce – Italy)**

by ***Veronica Garra*** (*Università del Salento, Italy*), ***Riccardo Guglielmino*** (*Università del Salento, Italy*)

The archaeological research in the protohistoric settlement of Roca had brought to light an exceptional collection of documents datable from the beginning of local Middle Bronze Age to the end of Final Bronze Age. The overshadowing quantity of discoveries, including several categories of *exotica* like Aegean pottery, ivory, glass, gold and amber, highlights the strategic importance of this site in the circulation of raw materials, finished artifacts, technologies as well as people and ideas in the Southern Adriatic area during the II millennium B.C. In all, eight amber beads, including one sample of the “Tiryns-type” and another of the “Allumiere-type”, plus two semifinished amber products come from Recent and Final Bronze Age levels. Infrared spectroscopy analyses are currently underway on all the samples.

## Session A02

### Animal utilized, processed, depicted: large mammal exploitation by prehistoric hunter-gatherers

Thursday, 5 September 2013, 08:30–13:00

Room: EU 102 (Building 1, ground floor)

**Organisers:** **Martina Lazničková-Galetová** (Moravian Museum, Czech Republic), **Stéphane Péan** (Muséum National d'Histoire Naturelle, France) and **Mietje Germonpré** (Royal Belgian Institute of Natural Sciences, Belgium)

The general issue is to identify management modes of large mammal resources by prehistoric hunter-gatherers through subsistence, technical and symbolic approaches. The methods explored include zooarchaeological analyses of raw osteological remains, typo-technological studies of osseous artefacts (from bone, ivory or cervid antlers) in mobility art and personal ornaments and studies of symbolic representations. Finally, it should bring into light the status of animals, from dietary and technical use to symbolic depiction.

#### **A02.01: The fearless ice age beasts killers. Central European Gravettian hunters of large mammals.**

by **Piotr Wojtal** (*Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Poland*), **Jarostaw Wilczyński** (*Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Poland*)

Gravettian technocomplex arose about 28 thousand years BP, and by next millennia, extended over various parts of Europe, from Pyrenees to Ural. In the Central Europe are located several well known Gravettian open-air sites in Austria, Czech Republic, Slovakia and Poland. The Gravettian technocomplex includes, among others, the earlier Pavlovian stage (e.g. sites: Pavlov I, Dolní Věstonice I), and the later Willendorf-Kostienkian stage (e.g. sites: Willendorf II, Petrkovice, Moravany, Kraków Spadzista Street). In Czech the most famous early Gravettian sites are located in the roots of Pavlovské (Palava) Hills, e.g. Pavlov I or Dolní Věstonice I and II. During next millennia hunter-gatherers moved into new places of residence e.g., Vah river valley (Slovakia) and south Poland (Kraków region).

Zooarchaeological studies allow us to reconstruct and compare animal food resources from different periods of the Gravettian. The oldest Gravettian sites: Pavlov I and Dolní Věstonice II were inhabited during many seasons and did not show clear hunting specialization. The younger Gravettian sites from Poland and Slovakia: Kraków Spadzista Street and Moravany Lopata, were occupied for a shorter period of time. At these sites, could be observed mammoths and reindeer hunting specialization features.

#### **A02.02: The hunters from Trenčianske Bohuslavice-Pod Turekom site, one of the most important Gravettian open-air sites in western Slovakia.**

by **Martin Vlačický** (*State Geological Institute of Dionýz Štúr, Slovak Republic*), **Ondrej Žaár** (*Institute of Archaeology of the Slovak Academy of Sciences, Slovak Republic*), **Michaëla Polanská** (*Université de Paris I, Panthéon-Sorbonne, Institut d'Art et d'Archéologie, France*)

The archaeological research in Trenčianske Bohuslavice-Pod Turekom site was realized in the years 1981–1986. The small revisory research in 2008 discovered three Gravettian occupational levels in superposition: in the depth of 25–35 cm (layer I – ~27 ka), 55–75 cm (layer II – ~28 ka) and of 85–125 cm (layer III – 29.5 ka). The most commonly hunted animal in the locality was reindeer, followed by mammoth and horse. People from site were most probably active mammoth hunters. Carnivores were hunted mainly for fur. The 1981–1986 collection includes 9043 lithic artefacts. The most used raw materials are local radiolarites and non-local erratic silicites. The group of tools consist mainly of blades and points. Interesting finds are lots of microlithic backed blades. Minor numbers of leaf points were also found, as well as unique group of 16 drilled quartz pebble pendants. The lithic industry from the locality is currently under review. Typologically it does not match with classic localities assigned to the younger phase of Middle Danube Gravettian. One of the most interesting typological features is the occurrence of original microliths with double transverse retouch, which can be after a detailed analysis denoted as fossiles directeurs of younger phase of Gravettian.

**A02.03: An interdisciplinary study of Elk (*Alces, alces*) exploitation in a multi-layer peat bog site in the Central Russia at Zamostje 2 (Moscow oblast, Russia)**

by **Charlotte Leduc** (UMR7041, France), **Julien Treuilot** (University Panthéon-Sorbonne (ED112), UMR7041 Prehistoric ethnology, France)

Excavated since 1989, the Zamostje 2 site, located in the Russian plain, is yielding very rich Mesolithic and Neolithic occupation layers. Situated on the left bank of the Dubna River, in wet boggy context, the site is characterized by very good preservation of organic remains such as bone and wood. The faunal assemblages, composed of thousands specimen in each identified layer, are dominated by Elk (*Alces alces*) which is the first hunted species and the dominant species supplying raw material for bone tool production. This diversified osseous industry, made from elk bones and antler, yielded thousands of pieces and waste, pointing to debitage and manufacture activities on the spot. Thus, the exploitation of elk seems to be clearly devoted to the acquisition of dietary products and raw material. The integrated zooarchaeological and technological analysis of Elk remains was recently undertaken. This interdisciplinary analysis, still in preliminary state, raises some important methodological issues, such as the question of identifying the waste from the diverse activities involved (butchery, debitage...). However, It will allow to reconstruct the total exploitation patterns of elk, from hunting (selective or not?) to butchering process to selection of raw material to manufacture of bone equipment.

**A02.04: Hunting animals in Mesolithic mobile art and tool decoration (sample of Zamostje 2 site)**

by **Vladimir Lozovski** (Institute for the History of Material Culture of the Russian Academy of Sciences, Russian Federation), **Olga Lozovskaya** (Institute for the History of Material Culture of the Russian Academy of Sciences, Russian Federation)

Osseous materials from numerous Mesolithic and Early Neolithic forest zone sites in Russia indicate the elk as the main game animal. Great value of this animal is registered in all material spheres of the ancient population. In faunal series elk's remains show numerous cut marks from disarticulating, there are a large series of tools made from elk bones and antler, as well as various objects of mobile art representing elk head or its full body. The Mesolithic layers of Zamostje 2 site (Central Russia) reveal many examples of elk's symbolic representation, including two head sculptures produced in a stylized manner and decorated with a geometric ornament. A series of bone knives and pins have handles decorated with elk "ears" or a bird profile. Besides, there are a large series of animal figurines from bone, antler, and wood (birds, snake, wild boar, etc.). Personal adornment is represented by numerous beads made from elk and beaver teeth. So, a large variety of symbolic objects associated with animals indicates the importance and complexity of hunting practices in the societies of hunters-gatherers.

**A02.05: Geographic and Temporal Variability in Cis-Baikal's Holocene Red Deer: Exploring Canines from Mortuary Contexts**

by **Robert Losey** (University of Alberta, Canada), **Tatiana Nomokonova** (University of British Columbia, Canada)

Red deer appear to have been one of the most important subsistence resources for Holocene foragers living in the Lake Baikal area of Siberia. Only a few habitation sites here are well dated and have been studied with modern zooarchaeological methods. Conversely, cemeteries in Cis-Baikal are abundant and most are well dated. Numerous graves here contain red deer canine pendants. We explore variability in red deer through metric analyses of these canine teeth. Study of modern red deer in this region indicates the presence of at least two morphotypes, with a smaller group of red deer being predominant in arid regions and a larger one in wetter areas. We also examine temporal variability in red deer tooth size through time, and assess its relationship with Middle Holocene climate change.

**A02.06: Processed cattle bones from Eneolithic cultures of Vučedol site (Croatia)**

by **Tajana Trbojević Vukičević** (Faculty of Veterinary Medicine University of Zagreb, Croatia), **Ivan Alić** (Faculty of Veterinary Medicine University of Zagreb, Croatia), **Snježana Kužir** (Faculty of Veterinary Medicine University of Zagreb, Croatia)

From a large sample of bones, teeth and horns from the Vučedol archaeological site, which belong to Eneolithic cultures, approximately 1.100 cattle remains were separated and analysed. Among those cattle remains, there is 6.45% (71 samples) of processed bone or bones with visible beginnings or traces in terms of tool manufacture. The most numerous are lower jaws (23 samples), all of which are modified in a similar way: the lateral and medial surface of the body of the mandible are smooth and shining, while behind last molar is a U or V shaped notch. All teeth are worn, and

based on a very sharp occlusal surface, it is certainly a question of an artificial wearing. Jaws processed in this way were probably used for scraping the subcutaneous tissue during skin processing.

The traces of bone processing are visible on 10 metacarpal and 5 metatarsal bones, where treatment is in either early stage, or it is a question of waste from treatment process and therefore it can't be certain for what purpose could they serve. Five ulnas were distally narrowed and formed into more obtuse or sharper spike and have probably served as an awl or even a larger needle.

#### **A02.07: Large Feline Representations on Chalcolithic Pottery (Cucuteni-Tripolye Civilisation)**

by Luminita Bejenaru (Romanian Academy – Iași Branch, Romania), **Dan Monah** (Romanian Academy – Iași Branch, Romania)

Depictions of large felines on Chalcolithic pottery (Cucuteni and Tripolye cultures) are described in terms of morphology and symbolism. In the settlements of the Cucuteni and Tripolye cultures there have been discovered few feline representations, and yet we consider that in the people imagery these animals seem to occupy an important position.

The lion skeletal remains are missing in the Cucuteni-Tripolye archaeozoological assemblages, and are extremely rare in samples of contemporary sites in the neighbourhood (e.g. Usatovo – Ukraine, Karanovo VI – Bulgaria).

Cucuteni-Tripolye feline representations are not painted realistically enough that we can identify with accuracy the specie/s; the painters represented rather fantastic stylised animals illustrating cosmogonic beliefs. The lion depictions on pottery could represent solar and/or power symbols.

*This work was supported by a grant of the Romanian National Authority for Scientific Research, CNCS – UEFISCDI, project number PN-II-ID-PCE-2011-3-0885.*

#### **A02.08: Objects produced in “animal style” in early Sakes period from Asian part of Eurasia.**

by Vlada Rechkalova (South Ural State University, Russian Federation)

The Scythian-Sakas objects which made in “animal style” were analyzed. These objects were found in different sites such as Arjan 2 Kichigino 1, South Tagjsken, Uygarak, Tasmola V, Taldy. The purpose of this abstract is attempt of find traits and regularity of images of animals which were produced in VII-VI centuries BC. First all artifacts I divided in classes: predators, herbivores, and birds. After that I made some typological tables. At the end I get follow conclusions. Images of predators are often representing in two positions: standing and lying. The herbivorous group concludes sagas, horses, and stags. On the objects of herbivorous group were showed only animal heads. Furthermore, the group artifacts with images of birds had complicated and abstract shapes and consisted of geometrical figures. In conclusion I want notice what the objects from different sites are resemble. Style, canonical poses, forms and technique of made of objects also same. All these facts allow me to conclude what nomadic tribes in early Sakes period had common ideology and the level of development of live.

#### **A02.09: Minoan and Mycenaean Ivories: Objects and Workshops**

by Angeliki Liveri (Greek Ministry of Education, Sports and Culture, Greece)

The focus of this paper will be a selection of objects made of ivory which are found in various Minoan and Mycenaean sites in Greece produced in the Bronze Age, notably in the second millennium B.C. The art of ivory carving developed mainly in the Late Bronze Age, after the 1600 B.C.

These finds, mainly found in graves, including idols of human figures or animals, seals, cosmetic boxes or decorating furniture, vases, doors and other luxury objects like hair combs, sceptres and mirrors. Some workshops are developed in Crete, Peloponnese, Sterea Hellas and Cyprus. Often they are located inside of the palaces and thus they are disappeared after their destruction. The artists decorate the ivories with motives of the Minoan or Mycenaean art. Sometimes they used new themes which show Egyptian or Syrian-Palestinian influences. The opposite can also be observed at the end of the Mycenaean period. That must have been the result of the commercial exchange between these regions and indicate the origin of the raw material as well.

The aim of this paper is to highlight the similarities and differences between the various local workshops concerning their iconography, style and technical processing of the material.

## Session A03

### Archaeological aspects of shamanism: iconography, artefacts, technology, and spiritual landscapes

Friday, 6 September 2013, 08:30–18:30

Room: EP 110 (Building 1, ground floor)

**Organisers:** **Emilia Pasztor** (SEAC, Hungary), **Herman Bender** (Hanwakan Center for Prehistoric Astronomy, Cosmology and Cultural Landscape Studies, USA), **Dragoș Gheorghiu** (National University of Arts Bucharest, Romania) and **George Nash** (Spiru Haret University, Romania and University of Bristol, UK)

As ethnographic evidence shows, shamanistic activity represents a complex phenomenon, extremely diversified, its spiritual activity possessing a large variety of materializations in material culture.

In the archaeological record of all prehistoric and historic periods there are a series of visual representations and objects that could be ascribed to these different worldviews, therefore to a shamanistic cognition and activity.

From the representations of the terrestrial world, to those of the outer worlds, mythical beings, decorations of geomorphs or objects, or closed complexes, the material culture of shamanism reveals itself to the world as a multifaceted human spiritual and material activity.

Representation of the outer worlds and the cosmos frequently abound. Congruent with the cosmos, spiritual landscapes are manifest in the cultural context of both the real and spiritual realms of existence. Shamanistic practices and/or ceremonies were performed in a distinctive location, a place where the individual person intervenes, thus becoming a spiritual landscape, one blended into the physical world by producing a numinous experience for those open to it.

A rich iconography supports these practices, to cite only the abstract figures, the images of humans and animals, or the male and female sexuality. In the archaeological record there is evidence of organic materials that can produce altered states of consciousness; the best example is the fossil remains of opium poppy.

Last, but not least a subject that can bring significant data on the shamanistic behaviour in technologies, especially on those in relation with fire.

An important topic of this session refers to the modes of representation of the experientiality of the archaeologist facing shamanistic material culture. Since we believe that the theme of the present session could be a fertile subject for research, we invite archaeologists and anthropologists to contribute to the session and to take part in the discussions.

#### **A03.01: Deux sites chamaniques solutréens: un ciel**

by **Chantal Jèques-Wolkiewiez** (*NICE Sophia Antipolis, France*)

Each culture offers a different setting to the personal visions through which a shaman's internal experience is conveyed. However, a vertical axis always places the world of divinities at the top, with the human world in the middle and the world of monsters below.

The initiate to shamanism as well as the shaman follow practically identical ways to reach another cosmic zone. The tree and the mountain, the ascending axis, symbolize for all ethnic groups the link between Man and the sky. The ways of access passing between two domains on a cosmographic axis often have a cave, a tunnel crossing a mountain, a source that springs up from the "earth's belly".

Already during the Solutrean period, two natural sites in the Dordogne, real refuges of serenity, allowing "ecstasy", present not only the indispensable natural characteristics named above, but have kept traces of these shamanic and cultural activities facing the same stars in the middle of the sky from this period: Le puits de Lascaux au centre de la Terre (The Well of Lascaux at the centre of the Earth), and le Fourneau du Diable (Devil's Oven), which seems to be right up in the sky.

#### **A03.02: Cave Art and social landscapes: the symbolic significance of Nalón river basin decorated caves (Northern Spain)**

by **Alejandro García-Moreno** (*MONREPOS Archaeological Research Centre and Museum for Human Behaviour Evolution, Germany*), **Miguel Ángel Fano Martínez** (*Universidad de La Rioja, Spain*), **Diego Garate-Maidagan** (*Université de Toulouse-Le Mirail, France*)

Palaeolithic rock-wall paintings have often been related with chamanism or sympathetic magic, although these approaches have been largely contested during the last decades (la crítica al segundo enfoque – magia s. – es más antigua, no?), due to their subjectivity. However, no matter the meaning beyond those representations, it is assumed that

decorated caves should have played a major role in hunter communities social organization, either as *residential* or *aggregation sites*, or as “*sanctuaries*” or ritual places. Whatever their function, their location was probably related to the construction of social landscapes, since they are supposed to have constitute significant landmarks within the landscape, maybe acting as attractors where large groups could aggregate, or as *hermetic* or *forbidden* places, which were supposed to be avoided.

In this paper we present the analysis of the location of several Late Palaeolithic archaeological sites from the Nalón river basin (Northern Spain). The location of these sites is analyzed using a GIS-based methodology, focusing on their possible prominence within the landscape. So we compare the location of both decorated and undecorated sites in order to identify the possible symbolic significance of decorated caves as landmarks, as well as their role in Palaeolithic communities’ social organization.

### **A03.03: Kók Tengri – The Soul of the Skies – a critical review of shamanistic practices in pre- and early historic Anatolia**

by ***Thomas Zimmermann*** (*Bilkent University, Turkey*)

The immensely versatile archaeological record of post-pleistocene Anatolia keeps on providing us with numerous features and artefacts tentatively associated with the sphere of cult, ritual and religion. Especially the rich iconography from early Neolithic sites like Nevalı Çori and the more recently excavated Göbekli Tepe or Körtik Tepe which deeply effects Near Eastern and Eurasian archaeology at large, triggered off numerous considerations about possible Neolithic “belief systems” that incorporated different communities from a wider geographical area about 12.000 years ago. Tracing possible evidence for shamanistic practices plays a key role in these studies, since the pictorial and sculptural art of famous (later) Neolithic Çatalhöyük, which was often interpreted in the scope of shamanistic ritual, stood long unparalleled within the cultic heritage of Asia Minor, which is now considerably enriched with the evidence from the above mentioned sites. The paper aims to critically reevaluate the present evidence in the light of new researches, and to discuss the proposed link of early shamanistic behaviour to pagan traditions of much later mobile steppe communities in Anatolia previous to Islamic overprint.

### **A03.04: Bear Myths and Rituals: The Moon, Women, Stars and Possible Ancient Links to Eurasia in North America.**

by ***Herman Bender*** (*Hanwakan Center for Prehistoric Astronomy, Cosmology and Cultural Landscape Studies, Inc., USA*)

The renowned mythologist, Joseph Campbell, identified four ancient traditions brought to North American from the ‘Old World’. Two of these traditions, bear cults and shamanism, are in sync with discoveries made over the past two decades at a prehistoric effigy mound group in southeastern Wisconsin. This paper will examine the 18.61 year, lunar maximum cycle and how it is connected with two bear effigy mounds found in eastern Wisconsin in conjunction with the bear stars in the north and circumpolar (bear cult) traditions. All may be part of very ancient origins from the old world that were spread both east and west. As women were members of the ancient American Indian bear cults (or clans) in some tribes and the celestial bear itself said to be female, it should come as no surprise that many women were regarded as great (bear) healers who possessed shamanistic (i.e. transformational) abilities. They were perhaps the first people recognized as such. The ideal of bear transformation still exists amongst some members of the Plains tribes in North America, specifically with women, one of whom the author has been in direct contact with over the years.

### **A03.05: Were-animals and shape-shifters: Shamanic cosmologies and ontologies of Native Americans and European prehistoric cave art**

by ***Enrico Comba*** (*University of Turin, Italy*)

Several anthropological studies conducted in recent years among different Native American cultures have revealed a series of common features in ontological premises and cosmological frameworks. These features seem to be shared by most of the Native peoples in both North and South America. They include: a system of relationships between humans and non-human beings based on an ontology “of persons” as contrasted to the ontology “of things” typical of the Western attitude towards Nature; a structure of the cosmos made by superposed layers, which express the idea of a reality represented as comprising hidden dimensions and invisible domains; and the key role played by ecstatic practitioners in establishing relationships with and acquiring knowledge from these multiple dimensions of the universe. Here, the idea is suggested that this elements could be profitably utilized to interpret the meaning of Palaeolithic cave art, not simply implying a series of typological likenesses, but suggesting the possibility of historic (pre-historic) links. It should be remembered that the main settlement of the Americas occurred in a period (from 30,000 to 20,000 years B.P.) which is contemporaneous with the creation of the masterworks in the caves of France and Spain.



### **A03.06: Caves and the sacral landscape: A case study on the Neolithic and Early Aeneolithic Periods in southeast Central Europe**

by **Vladimír Peša** (Regional museum and gallery in Česká Lípa, Czech Republic)

Interpretive models of the cave use in prehistoric society are closely related to developments in the field of archaeology and changes in thinking during the 19th–20th centuries. Looking at the period from the proto-Neolithic to the Early Aeneolithic, the paper tests the relationship between finds, caves' characteristics, and functional models of their use. The most important sites are associated with dark or semi-dark caves, and for the most part show evidence of cult activities. The main phases of the cave use correspond to periods of significant climatic changes with periods of instability. It would appear that cult activities occurred only in traditional societies, whereas caves were not used by cultures that were more advanced from a civilisational viewpoint. From a general cosmology the underworld is part of the nonhuman realm. As a natural archetype in human society, caves were a space for communicating with the gods and, along with archaeological sites from hilltops, may express a knowledge of the mythological Cosmic Axis. Caves as important religious sites fall within the concept of the sacral landscape, whose universality is documented by geographically remoted analogies and is closer to the traditional view of the Central European landscape until the early modern era.

### **A03.07: Connecting earth and sky: “shamans” or mediators in the Late Neolithic of the Carpathian Basin**

by **Alexandra Anders** (Eötvös Loránd University, Hungary)

It has been proposed that some Late Neolithic burials of the Late Neolithic in the Carpathian Basin, such as the ones found at Čičarovec and Tártária, can perhaps be interpreted as shaman graves. In this paper, I shall explore the following issues: 1) whether the use of this expression is acceptable for the period between 5000 and 4500 BC in the Carpathian Basin, or whether these individuals, buried in a special manner, should rather be described as mediators; 2) the artefactual attributes of these mediators and their imprint in the archaeological record; and 3) the phenomena which, in addition to the already known ones, can be associated with the mediators active in a tiered world.

### **A03.08: Songs of the Shamans? Acoustical studies in European prehistory**

by **Chris Scarre** (Durham University, UK)

Sound is one of the lost dimensions of the prehistoric and early historic periods. In recent years, multisensory approaches to the past have sought new ways of addressing this deficiency, moving beyond approaches developed by music archaeologists to consider not the sound producers (instruments) but the spaces in which sounds and ‘music’ may have played a particularly important role. This has included analyses of Palaeolithic painted caves and Neolithic chambered tombs and stone circles. The otherworldly significance of special sounds is well attested by ethnographic studies. The transfer of such a general perspective onto mute prehistoric structures is however fraught with difficulty. This paper briefly reviews recent work in this field and urges caution, where careful attention to the archaeological evidence may sometimes be effective in constraining the range of possible scenarios. Whether music was used to induce altered states of consciousness or heightened awareness among participants within these ceremonial structures remains open to question, and parallels drawn from shamanism require careful contextual support.

### **A03.09: Stonehenge rocks: The overlooked significance of lithophones**

by **Paul Devereux** ((i) Royal College of Art; (ii) *Time & Mind* journal, UK)

Lithophones (naturally ringing or musical rocks) tend to be seen in isolation as simply curiosities. As this audio-visual presentation will show, they do in fact represent a somewhat overlooked strand in worldwide archaeological and ritual contexts. The present author is co-investigator in the Royal College of Art's 'Landscape & Perception' project, which is studying the Carn Menyn area in the Preseli Hills in Wales, the source area of the Stonehenge bluestones, from visual and acoustic perspectives ([www.landscape-perception.com](http://www.landscape-perception.com)). We have discovered that a significant percentage of the stones (10–40%) in the Carn Menyn outcrops and adjacent areas are lithophonic. We suspect that sound could have been one of the properties that made these rocks so special to the monument builders: cross-cultural evidence will be presented indicating that numerous ancient peoples considered spirits to live inside rocks and behind cliff-faces – a spirit world that shamans believed they could reach during trance. Furthermore, the presentation outlines the rich context for the Preseli lithophones, giving examples of how such rocks were used and venerated in many ancient cultures, reaching extraordinary technical levels of musical sophistication in India and philosophical significance in China.

### **A03.10: Seeing and believing but invisible from the archaeological record: How burial architecture in the Neolithic became ritualised**

by George Nash (*University of Spiru Haret, Romania*)

It is estimated that there are over 30,000 Neolithic burial-ritual monuments in Europe, the majority of which are constructed of stone. The architecture for this enigmatic group of buildings is based on four primary architectural elements: chamber, covering mound, entrance/facade and passage. These elements, arranged in many different ways, would have established local and regional identity. Although some excavated sites reveal good preservation and provide answers to the enquiring archaeological mind there is still many questions concerning the sensory attributes various architectural devices within and outside the monuments had to offer. Based on a set of universal rules extending across most of Europe, architecture devices appear to act similarly. In this paper, I will discuss, albeit briefly how certain architectural devices behaved when confronted with a death or ritual event. I will suggest that we need to look far beyond the mere descriptions of the archaeological page in order to make an attempt to establish a meaningful account of how sensory perception played an essential role in monument design, construction and use.

### **A03.11: Beyond fire and water. Humans and animals in an Arctic hunting society.**

by Ulla Odgaard (*The National Museum of Denmark, Denmark*)

This paper presents archaeological structures of the Paleo-Eskimo Dorset culture at the Igloolik sites in Nunavut, Northeast Canada, which were excavated in the 1950ies by a Danish archaeologist, but never published. The material includes house structures, hearths, tools, bone-assemblages and art objects – some in a possibly ritual context. An assortment of cairns, pits and low mounds were designated "graves" by the excavator, and indeed some of them contained human bones. A new interpretation, however, suggests that at least some of these structures are not the material remains of burials, but rather reflect other kind of rituals performed by the Paleo-Eskimos. Many of the structures had been re-used or looted previously, but one Late Dorset low mound was well preserved. The excavation revealed human bones together with animal bones and artefacts, and it is possible to distinguish a sequence of acts, which find their counterparts in a myth told by historical Eskimos.

### **A03.12: In search of the invisible – explaining the visible: Gold foil figures on display**

by Lotte Hedeager (*University of Oslo, Norway*)

Scandinavian belief systems of the late prehistory are reflected in Old Norse and Old English poems and sagas. Though fragmented and widely dispersed these texts reveal so many pervasive traits of shamanism that they cannot be explained without reference to the existence of a vigorous shamanic tradition in the Scandinavian past. During the last decade this shamanistic imprint has been widely discussed, bringing archaeological evidence in dialogues with literary studies. The single most common group of figurative representations from the Late Iron Age are the tiny gold-foil figures from AD 550/600 to 800. They are related to specific sites and buildings with ritual connotation, and much effort has been devoted to understanding the different motifs and the specific function of the gold foils. None of these explanations have, however, satisfyingly confronted the images of the gold foil with the central elements of the Old Norse system of belief in which their function must have been imbedded. In this paper I propose a new interpretation of their meaning.

### **A03.13: Some aspects of the shamanism in East Baltic Mesolithic and Neolithic**

by Ize Biruta Loze (*Institute of History of Latvia, Latvia*)

While observing the surface of the drums of Finnish Laps investigated by ethnographers we see magic signs, as well as different trees, animals, devices and schematic human or spiritual figurines (Manker 1968, Fig. 4, p. 31). It means, that we are able to reconstruct such a situation in Mesolithic and Neolithic times, when such or similar instruments existed that enabled concentration and performance of shaman activities.

As a bright example of this, an iconographic image on the surface of a triangular slab can be mentioned that was found in the Late Mesolithic layer of Zvidze multi-layered settlement of Lake Lubāns Wetlands and on the surface of which a man's figure, made using dot technique, is found. The figure of the shaman is portrayed in a space formed by the vault of the heaven with stars and the surface of earth, which are also depicted using dot technique. Surely, the slab could possess a magical power and only shaman could keep it in his hand, but not any other member of the respective clan. Possibly, this image encompasses also this ceremonial or spiritual landscape keeping in mind that such attention has been paid to the environment around the man's figure.

### **A03.14: Shamans in the society of the eastern Baltic Early Bronze Age**

by **Algirdas Girininkas** (University of Klaipeda, Lithuania), **Linus Dauqnorā** (University of Klaipeda, Lithuania)

Around the Kretuonas lake, which lies in eastern Lithuania, about 30 Stone and Bronze Age settlements were found. Two Early Bronze Age buildings with fireplaces in the Kretuonas 1C settlement were discovered. Inside buildings near the hearts crushed human heads with various shrouds were found. The three men 25-30 years old, woman about 25 years old and children under 3 years old were buried. Burial at the fireplace can be seen as a rite associated with ancestor worship or relate with people of Kretuonas 1st village community, which had the characteristics of a shaman authority. Graves contained numerous burial items, between them bone pendants depicting people (male) heads (masks). Our hypothesis – human masks were made from human skeletal bones. The preliminary osteological analysis of the masks with the Portable Scanning Confocal Optical Microscope 2K3 suggest that these masks have been made from the tubular bone fragments of even-toed ungulates (*Artiodactyla*). Determining what kind of bone – human or game – made masks are very important for the spiritual life development detection of the Early Bronze Age community. The new case forces us to revive the long-lasting discussions about the institution shamans in the society of the Early Bronze Age.

### **A03.15: Shamanism in the archaeology of Nomadic peoples of Eurasia in the Late Bronze and Early Iron Ages**

by **Zaur Hasanov** (Institute of Archaeology and Ethnography of the Azerbaijan National Academy of Sciences, Azerbaijan)

In this paper major elements of the Cimmerian, Scythian and Sarian shamanistic rites are reconstructed based on the comparison of historical, archaeological, mythological and ethnographic data. As a basis, for the comparison of ethnographic material with archaeological finds, the Shamanism of Siberian and Central Asiatic people is taken. Diverse archaeological elements are examined: 1) stratification of burials which represent the concept of worlds and travels between them (mound, dromos etc.); 2) construction materials, different bronze and ceramic objects and their location in graves (vertical log representing “tethering post”, specific vessels representing “milky lake” etc.); 3) ornaments from the grave finds. By comparison of ornaments in different periods and cultures their true mythological meanings are identified. E.g. the semantic meaning of a comma shaped and rhomb (or cross) shaped ornament is determined. Information of written sources is tested by providing archaeological and ethnographic support. E.g. the description of the Scythian cult of “bath tents” with cannabis in Herodotus and their specimens in Pazyryk burial mounds are compared to the Shamanic cults. The description of the Scythian Goddess Tabiti is compared to the depictions of the sitting Goddess with the flame next to her.

### **A03.16: Shamans of the Ancient Iranian Nomads: Artifacts and Iconography**

by **Sergey Yatsenko** (Russian State University for the Humanities, Russian Federation)

Graves studied by archaeologists that can be attributed to Iranian shamans typified by V. N. Basilov are absent in most of the ancient Iranian culture. For these societies, shamanic rituals were less important than some others and shamanic paraphernalia were not usually put into graves because shamans often had burials of special type. In Pazyryk, the only exceptions are barrows 2 and 5 where both burials had definite “Iranian” shamanic attributes. Their burial rituals and social status were unusual for shamans of a “Siberian” type. Probably aristocrats, they likely took part in some rituals of shamanist type, but it was not their main public function. Barrow 2 contained a grave of man who had a tattoo of the Chinese god *Juntsi* (who slew demons) on his right hand, a caftan with the World Tree image and unusual headdress with a tournament motif. The Pazyryk culture was located at the far eastern border of Iranian World where such rituals were more important for people. Images of shamans, shamanic spirits and some of shamanist rituals with wild animals, i.e. petroglyphs are probably seen for the first time during the Bronze Age and Scythian periods in Central Asia in Bayan Zhurek (SE Kazakhstan), in Zelenoe Ozero (Altai), in Oglakhty (Khakasia).

### **A03.17: (Post?) Shamanic Spiritual Landscape at Palenque, Chiapas, Mexico**

by **Stanislaw Iwaniszewski** (State Archaeological Museum, Poland)

Though the origins of the Maya divine kingship are unknown, scholars have long proposed that the Maya adopted key features of their cult of rulers from the Olmec. Some researchers suggested that the nature of the Maya divine kingship was shamanistic. There has been some debate as to if “shaman” is a term applicable to Maya elites.

Maya rulers performed rituals that are analogous to shamans but acted within a much more institutionalized context. Shamanistic and Maya cosmologies bear significant similarities; however the highly structured cosmology seems to leave no place for a more flexible shamanistic worldview.

During the Late Classic period, Maya rulers were memorialized through monumental architecture built within cities and placed in accordance to local spiritual topography. Pyramids, shrines, ceremonial plazas were named to record local mythical histories and deified founders of royal lineages. To recreate the dynamical relationship between materialized mythical places associated with the spiritual landscape, the paper explores astronomical alignments and visual connections between structures built in the 7<sup>th</sup> and 8<sup>th</sup> centuries. The ritual landscape at Palenque combines sites associated with shamanic beliefs with ceremonial locations linked to the seasonal procurement round. The paper seeks to establish differences between the Maya and shamanic worldviews.

### **A03.18: Technoshamanism. Experiencing the ASC aspects of pyrotechnologies**

by *Dragoș Gheorghiu* (*National University of Arts, Romania*)

Due to their strict repetitive organization, both pyrotechnologies and rituals display a similar structure. Because every stage of the *chaîne-opératoire* of these technologies shall be observed and reiterated with precision, this activity generates a state of automatism, a dissolution of the perception of time, which combined with the visual effects of staring at the flames for a long period, produces Altered States of Consciousness (ASC).

There is no written evidence regarding these ASC experiences induced by technology, but only the analogies we can establish between the ethnographic shamanistic experiences and the experientiality of the modern performer. Shamanism and pyrotechnologies sometimes present remarkable analogies, both being structured by rites of passage that affect the body and mind of the performer, finally leading to a trance-like experience. The historian of religions Mircea Eliade revealed this shamanistic character of metal technology, for example.

The paper will describe, from an experiential perspective, a series of archaeological experiments with sunken-up-draught kilns and metal furnaces, whose operation necessitated stereotyped actions, technological rites of passage, and finally generated a ritualized body and a loss of Ego awareness, similar to shamanistic experiences.

## **POSTERS**

### **A03.01-P-2: Significance of Deer in Shamanic Traditions of Central and Eastern Europe**

by *Henry Dosedla* (*German art forum, Germany*)

Apart from abundant mythological evidence dealing with deer in most regions of Austria and adjacent countries, which are accompanied by numerous meaningful applications of the deer motive in various aspects of fine arts there are also adequate records of contemporary folk beliefs shared by former hunters and poachers as well as by traditional healers having been collected during the last decades of 20<sup>th</sup> century.

Deriving from many features of their oral traditions these apparently are not only showing significant parallels with most archaic patterns partly dating back to earliest prehistoric periods but also with supernatural concepts on game shared by some of the last tribal hunting societies outside Europe until recently still representing Neolithic standards which had been studied by long term field work by the author.

### **A03.02-P-2: The Interrupted Ditches from Pit-Grave Barrows of Central Ukraine as Sanctuaries**

by *Mykhaylo P. Syvolap* (*Cherkasy National University, Ukraine*)

The subject of the paper are 3 interrupted ditches under the barrows of Pit-Grave culture (IIIrd mil. B.C.) near Lesky in Middle Dnieper Area. The best preserved circular ditch with 8 interruptions had the outer diameter of the ditch of 15,8–15,9 m. Among other objects of this barrow the lower parts of two wooden posts (view finders?) and two fire-places (“fire posts”?) must be mentioned. The rest two ditch barrows situated 2–3 km to the SW are forming a triangle system.

Probably the interrupted underbarrow ditch was the peculiar negative cromlech which marked the significant directions, e.g. the solar-lunar azimuths between the interruptions and posts.

There are many analogies to these objects at the territory of Ukraine, Russia, Central and Western Europe (“rondels” and “hengess”), they are spread from the British isles (Stonehenge) to the Urals (Savin) and are dated back to IV–III mil. B.C. (Lengyel, Trypillia, Pit-Grave cultures etc.).

On the grounds of archaeological and other data it is suggested to consider the Lesky underbarrow interrupted ditches to be the astronomic sanctuaries of solar-lunar cycle of ancient Indo-Europeans with astronomic, calendar and ritual function (Syvolap, 1998).

## Session A04

### Archaeological Perspectives on the Thirty Years' War

Friday, 6 September 2013, 08:30–16:00

Room: UP 101 (Building 2, ground floor)

**Organisers:** James Symonds (University of York, UK), Natascha Mehler (University of Vienna, Austria) and Pavel Vařeka (University of West Bohemia, Czech Republic)

The Thirty Years' War (1618–48), which began and ended in Bohemia, has also been termed 'the European Civil War.' Over the course of 40 battles, which ranged across the continent, the balance of political power shifted and the structure of modern Europe as a community of sovereign states was established. The causes of the war were complex. It is generally accepted that the war originated as a struggle over religious order within the Holy Roman Empire, but the conflict spread to become a more general struggle against the hegemony of the Spanish and Austrian Habsburgs, involving all of the early 17th century great powers. The scale of the destruction unleashed across Europe by soldiers and mercenaries was unparalleled. Much of the fiercest fighting occurred in German regions and it has been estimated that 7–10 million Germans lost their lives. The social and economic impacts of this trauma were far-reaching.

In recent years new archaeological work on battlefields, shipwrecks, and destroyed villages, has generated a renewed interest in the war. In this session we will examine the Thirty Years' War and its legacies today from a variety of archaeological and historical perspectives. By taking an interdisciplinary approach, which incorporates evidence of historical archaeology, palaeopathology, the new genetics, and bioarchaeology, we aim to create fresh insights into this most traumatic period of European history. We encourage multi-cited approaches which link events, processes, and the flow of people and materials and move beyond traditional site-bound or micro-regional interpretations. Papers are invited on, but not limited to, the following themes: artefacts and material culture studies; archaeological surveys and excavations of battlefields, urban and rural domestic settlements and industrial sites; underwater archaeology; the bioarchaeology of human, plant, and animal remains; heritage politics, legacies and representations of the Thirty Years' War.

#### A04.01: Archaeological Perspectives on the Thirty Years' War

by **James Symonds** (York University, UK), **Natascha Mehler** (University of Vienna, Austria), **Pavel Vařeka** (University of West Bohemia, Czech Republic)

The Thirty Years' War (1618–48), which began and ended in Bohemia, has also been termed 'the European Civil War.' Over the course of 40 battles, which ranged across the continent, the balance of political power shifted and the structure of modern Europe as a community of sovereign states was established. In recent years archaeological work on battlefields, shipwrecks, and destroyed villages, has generated a renewed interest in the war. In this session we will examine the Thirty Years' War and its legacies today from a variety of archaeological and historical perspectives. By taking an interdisciplinary approach, which incorporates evidence of historical archaeology, paleopathology, the new genetics, bioarchaeology, and landscape archaeology, we aim to create fresh insights into this most traumatic period of European history.

#### A04.02: Archaeological Research on Thirty Years' War Battlefields in the Czech Republic: A History, and Overview of Current Work

by **Václav Matoušek** (Faculty of Humanities Charles University, Czech Republic)

The earliest archaeological investigations on sites from the Thirty Years' War in the Czech Republic took place in the early 20<sup>th</sup> Century, when work was undertaken on the site of a battle which occurred near Rakovník, in 1620. Investigations were also undertaken on the site of a Swedish army camp dating from 1639–40, at Stará Boleslav. Two rescue excavations were undertaken in the 1960s and 70s on mass graves from the first major engagement of the war, the Battle of the White Mountain, which took place in the outskirts of Prague, in 1620. Systematic landscape research commenced in the 1980s, with several seasons of survey and excavation (1988–90 and 1999–2003) on field fortifications from the 1647 battle between the Emperor's armies and the Swedish army at Třebel. Excavations and surveys have also taken place (2006–present) on upstanding field fortifications dating from 1621 at Rozvadov. A programme of systematic metal detecting and topographical survey is ongoing on field fortifications from the battle between the Emperor's armies and the army of the Bohemian Estates armies which place close to Rakovník in 1620. Finally, questions relating to the construction of field fortifications have been tested by the building of experimental earthworks, from 2002

#### **A04.03: Metal Detector Prospection of Two Battlefields from the Beginning of the Thirty Years' War: Rakovník 1620 and Rozvadov 1621**

by *Kateřina Blařková* (Muzeum TGM v Rakovníku, Czech Republic), *Pavel Hrněiřik* (independent researcher, Czech Republic), *Václav Matoušek* (Faculty of Humanities, Charles University, Czech Republic), *Zdeněk Šámal* (independent researcher, Czech Republic)

This paper will present the results of metal detector prospection at two battlefields from the Bohemian phase of the Thirty Years War: Rakovník (1620), and Rozvadov (1621). These prospections were undertaken in 2010–2012, and were organized by the TGM Museum of Rakovník (Rakovník project), and the Faculty of Humanities, Charles University (Rozvadov project), respectively. The projects involved all-year-round fieldwork, along with archive and historical research. In both cases field prospection by non-destructive inspection and topographical survey was supplemented and greatly enriched by the use of metal detectors; surface or topsoil finds were accurately surveyed and located by means of GPS. The most frequent metallic finds recovered by the metal detector surveys were leaden and ferrous projectiles of different calibers (pistol, harquebus, musket, and even field cannons or mortars). No fewer than 340 of these objects were recovered at Rakovník, and 336 at Rozvadov. When considered alongside textual and cartographic sources, computer-based modeling of the calibers, and spatial distribution of these finds brought several new insights into the history of both battles, and also enhanced understandings of warfare at the beginning of the Thirty Years' War in general.

#### **A04.04: Thirty Years' War on the Czech-Moravian border**

by *Petr Hejřal* (ARCHAIA Brno, o.p.s., Czech Republic), *Aleš Knápek* (Muzeum Vysočiny Havlíčkův Brod, Czech Republic), *Jana Mazáčková* (Masaryk University, Czech Republic)

This paper will discuss recent archaeological excavations on from the period of the Thirty Years' War on the Bohemian-Moravian border, and will go on to identify possible themes for future research. The sites that we will discuss are located in, or in the vicinity of the royal town of Jihlava, in the Bohemian-Moravian Highlands. At the beginning of the Thirty Years' War Jihlava sided with the Bohemian cause, but following the defeat of Bohemian forces at the Battle of the White Mountain in 1620 the town shifted its allegiance to support the Imperial allies. Jihlava was captured by the Swedish army in March 1645, but was re-captured by the Imperial army following a siege in the autumn and winter of 1647. The development of the town defenses is well-described in early modern documentary sources; however, in the last ten years the chronological development of the defenses has been refined using archaeological evidence. Field surveys around the town have supplemented the surviving 17<sup>th</sup> century documentary sources, and have focused on the Imperial army camps from the siege of 1647. Additional work has focused on the field fortifications, and two bastion re-doubts have surveyed and partially excavated.

#### **A04.05: Deposits of Coins and Treasures: Forgotten Witnesses of the Thirty Years' War in Bohemia**

by *Michal Preusz* (University of West Bohemia in Pilsen, Czech Republic)

Buried treasures and intentionally concealed deposits of coins have always aroused much attention. Interest has for the most part focused on the nominal value of such deposits, whether high, or low, and this is certainly the case with examples from the Thirty Years' War. In the Czech Republic coin hoards re-discovered by chance, or by intentional metal—detecting have at best become incorporated into museum-based numismatic collections, or at worst ended up in the hands of dealers, or on the illegal market.

Modern archaeological techniques offer a range of new perspectives on such phenomena, however. Coins and other buried items of value can provide a unique insight into cultural behavior, and contemporary attitudes to historical events. In this paper I will discuss how buried deposits of coins may be re-assessed as cultural assemblages that reveal a great deal about the horrors of war, and the people who were forced to endure it.

#### **A04.06: The Impact of the Thirty Years' War on Rural Settlement in Bohemia**

by *Pavel Vařeka* (University of West Bohemia, Czech Republic), *Lukáš Holata* (University of West Bohemia, Czech Republic), *Petr Kočár* (Institute of Archaeology Czech Academy of Sciences, Czech Republic), *Libor Petr* (University of West Bohemia, Czech Republic)

The Thirty Years' War started and finished in the Bohemian Kingdom, with the Czech War (1618-1620), and Swedish attack on Prague (1648). The destruction of land was among the worst in the whole of Europe. The impact of war on settlement was enormous, and the country lost about one third of the whole population and many villages were

destroyed or deserted. Recent research by the Department of Archaeology at the University of West Bohemia has focusing on the disruption of the rural settlement pattern using a variety of spatial GIS analyses. The topographic survey of 5 deserted villages and their hinterlands situated in woodland has been completed in western and central Bohemia. In addition to these macro-scale landscape transects, research into deserted villages has produced complete village and farm plans by means of non-destructive methods, and generated evidence of sudden disaster as recorded in the burnt horizons of excavated sites. This "stopped life" perspective provides a unique opportunity for archaeology to recover closely-dated evidence for living standards at the time of the war, while environmental archaeology shows corresponding changes to vegetation after village abandonment, with a reduction of open fields, and the succession of woodland, which survives to this day.

#### **A04.07: Abandoned, Destroyed, Burned? The Sudden End of a Prospering Village in Northern Bavaria during the Thirty Years' War**

by *Eike Henning Michl* (*Otto-Friedrich-Universität Bamberg, Germany*)

As part of a recent archaeological research project to study the development and remains of medieval and post-medieval settlement sites of a micro-region in northern Bavaria, it was possible to conduct a series of smaller excavations in a rural village called Lindelach, a deserted settlement located on the eastern outskirts of Lower Franconia. According to written sources and archaeological remains this village, on the doorstep of the former Roman Catholic town of Gerolzhofen, dates back at least to the 10th century, and consisted of approximately 22 homesteads c. AD 1600. The tragic events of the Thirty Years' War put an end to this prospering community. The sparse contemporary documents tell of its destruction in 1631 by Protestant soldiers; Lindelach apparently shared the fate of many villages in this conflict. But what really happened in the autumn of 1631? And what was life like in Lindelach until this doubtless life-changing experience? By using modern archaeological techniques our work is creating new insights into the history, structure, development, and downfall of this almost forgotten lost settlement.

#### **A04.08: What is the "Legacy" of May 4th 1632? The Swedish Threat to Ingolstadt Fortress**

by *Gerd Riedel* (*Stadtmuseum Ingolstadt, Germany*), *Ruth Sandner* (*Bayerisches Landesamt für Denkmalpflege, Germany*)

The fortified city of Ingolstadt, in Bavaria, was one of the most important strategic points along the German Danube. In the 16<sup>th</sup> and 17<sup>th</sup> century, the University of Ingolstadt was the leading Roman Catholic university in the Holy Roman Empire.

The Swedish offensive against Bavaria started in March 1632. Surprisingly, Ingolstadt resisted the Swedish attack as Gustav Adolf's primary aim was to destroy the bridge across the Danube.

This presentation focuses upon the excavations of the bastion "*Eselbastei*" on the northern side of the Danube. This solidly constructed fortification played a decisive role in defending against the Swedish attack. Its development and construction during the 16th and the 17th century can now be understood comprehensively, and in great detail.

The threat to Ingolstadt was enormous, but it was spared of any damage. The villages and mills around the city suffered a rather different fate. In this respect it is worth considering whether changes in the settlement pattern around the city can be linked to the events of 1632, and whether, indeed, in the absence of any substantial damage to Ingolstadt itself, it is possible to demonstrate that a military confrontation occurred, without resorting to evidence from documentary sources.

#### **A04.09: Field Fortifications from the Thirty Years' War in Bavaria, as seen through LIDAR data**

by *Pavel Hrnčířik* (*independent researcher, Czech Republic*)

The potential of the airborne laser scanning technology (LIDAR) is nowadays well known in archaeology and hence its application for archaeological surveys is relatively well established in a number of countries. More widespread use of this technology is limited, however, by relatively high costs when the scanning is provided as a custom service. A cheaper alternative may be represented by LIDAR data provided by public surveying offices, as is, for example, the case in the German Free State of Bavaria, where high resolution LIDAR data (DGM1) are available for the entire area of the state. This paper will present research on a selection of field fortifications from the period of the Thirty Years' War in four localities in Bavaria: Fürholz (1619), Waidhaus (1621), Zirndorf (1632), and Nördlingen (1634), as seen through the DGM1 data, and with the help of selected GIS analytical tools. The typology of these field fortifications will be discussed and related to their respective uses in the context of the Thirty Years' War.

#### **A04.10: The Modernization of the War Industry: Swedish Iron and the Battlefields of the Thirty Years' War**

by [Georg Haggren](#) (*University of Helsinki, Finland*)

A process of modernization swept through the Swedish iron industry in the 1620s and 1630s. Large new ironworks were established incorporating blast ovens and forge hammers. The organization of iron production changed, too. Instead of the Crown and peasants controlling production the ironmaster emerged, and began to play a central role in iron production. Foreign specialists played an important part in the success of this new system. At a time when most of Europe was suffering from an economic crisis and religious wars, Sweden offered skilled Protestant ironworkers the opportunity for self-advancement and a safe haven from confessional strife. As result, hundreds of Walloons and Germans immigrated to Swedish ironworks. Dozens of new industrial plants were founded in Sweden, and some in Finland, which at the time was the eastern part of Sweden. Sweden became self-sufficient in all kinds of weaponry. The domestic production of bar iron, cannons, guns and blank weapons was soon able to satisfy the needs of Swedish armies, and at the same time, religious wars and economic crises in Europe helped Swedish iron to enter international markets on a larger scale. Archaeological research into the remains of this industry has hardly begun, but has great potential.

#### **A04.11: Pilgrims from Croatia on the Holy Roman Empire's Territory during the Thirty Years' War**

by [Ana Azinovic Bebek](#) (*Croatian Conservation Institute, Croatia*)

The paper discusses pilgrim medals found in excavated 17th century graves in north-western Croatia. It is known that Croatian soldiers were actively involved in the Thirty Years' War. The question is: were these pilgrim medals brought from pilgrimage sites in the Holy Roman Empire by returning Croatian soldiers? Or are they evidence for some other exceptionally strong form of pilgrimage activity in the 17<sup>th</sup> century? The paper will consider evidence for the termination or continuation of pilgrimage routes at this time, and the dangers lurking on these routes. Based on the number of pilgrim medals that have been found and analyzed so far, it may be concluded that the favourite pilgrimage sites visited by Croats in the 17<sup>th</sup> century Holy Roman Empire were Mariazell, Altötting, Cologne, Taferl and Einsiedeln. A pilgrim had to travel eight to ten days from Zagreb to Mariazell and Taferl, and twenty days from Zagreb to Cologne. A journey of ten to twenty days entails substantial financial costs, and this needs to be taken into account when examining the social status of pilgrims. Support mechanisms, such as the benevolence of fraternities existed, however, and with the providence of God, poor people went on pilgrimages too.

#### **A04.12: A Mass Grave from the Battle of Alerheim (1645)**

by [Kathrin Misterek](#) (*Independent Researcher, Germany*), [Alexander Lutz](#) (*Ludwig-Maximilians-Universität München, Germany*)

In February 2008, a mass grave was discovered during construction works near the village of Alerheim, Bavaria. Hundreds of human bones, many of which showed traces of violence, lay without skeletal order in a shallow pit measuring 2.6m by 2.3 m. These disarticulated skeletal remains had been buried some time after the event of death. The presence of artefacts such as lead bullets, and the location of the pit close to Alerheim soon connected the find to the Battle of Alerheim (also known as the Second Battle of Nördlingen). The united army of French, Hessian and Weimar troops defeated the Imperial and Bavarian army at this battle, in 1645, but neither side buried their dead, and the battlefield was left covered with thousands of corpses. Months later, the decomposing human remains were gathered and buried in mass graves by people living nearby. Documentary sources from this period describe far more than the military events, and the correspondence between local leaders tells us a great deal about conditions after the battle. The analysis of these historical sources, in combination with archaeological evidence, and the anthropological examination of the human remains, allows us to create a detailed interpretation of this historical event.

#### **A04.13: Far Behind the Front: The Ambitions and Shortcomings of an Aspiring Military State in the 17th Century**

by [Claes B. Pettersson](#) (*Jönköping County Museum, Sweden*)

Sweden entered the Thirty Year's War in the 1620s and became an important participant in the following decade. Battles like Breitenfeld and Lützen were turning points in this devastating struggle, the European Civil War of the 17th century. A side effect was that Sweden emerged as a leading military power in Scandinavia, its trial of strength with Denmark coming to a cataclysmic end a few decades later. One of the reasons for the success of this former marginal European country was a thorough mobilization of its resources, combined with rapid modernization and militarization of the society. The visions of the leading groups were grand enough, but couldn't always match the economic realities.



The resources needed to fulfill all of the ambitious plans simply weren't there. The strategic town of Jönköping with its modern layout, the royal chartered factories and the large artillery fortress can be seen as typical for the new towns of the period. But its history and development also illustrates the underlying weakness of Sweden aiming to become a major power in Northern European politics. Extensive archaeological research in the manufacturing areas and the castle has revealed both the scope of the projects and the problems involved.

#### **A04.14: Biographies of Looting: The Material Culture of a War in a North European Context**

by [Jonas Nordin](#) (*National Historical Museum, Sweden*)

This paper discusses the use and re-contextualization of material culture looted by the Swedish army in Central Europe during the Thirty Years' War. During the war, and in particular towards the end, just before the Peace Treaty of Westphalia, the Swedish army looted its way through Germany and Bohemia, explicitly searching for valuable goods from the royal courts and aristocratic households of the home country. Works of art, books and antiques – objects of historic meaning and value – were highly coveted by the Swedes. After the war, when brought back, these objects of looting were recontextualized, and often reshaped into something new, or had a new history added. Often objects were internalized into a domestic narrative of greatness and “Swedishness” or “Gothic”. This paper will trace the biography of some of these looted things from the Thirty Years' War, and examine how they came to be used in Sweden, putting an emphasis not only on their display, but also on the re-modeling and re-working of things. The looted objects will be discussed as active materialities of modernity acting as, and being used as nodes of change, globalization and modernization.

#### **A04.15: The Materiality of the Northern Renaissance and the Cultural Impact of the Thirty Years' War on 17th century Sweden**

by [Vesa-Pekka Herva](#) (*University of Helsinki, Finland*)

This paper discusses the cultural impact of the Thirty Years' War on Sweden from the perspective of material culture studies, and will focus on the rise of Renaissance/Baroque culture in Sweden. Elements of European classicism started to appear in Swedish culture in the early 17<sup>th</sup> century, but became more pronounced with the Swedish intervention in the Thirty Years' War. Swedish troops blundered archives, libraries and collections – including a collection of the de Vries Baroque sculpture and Emperor Rudolf II's cabinet of curiosities – during their successful military campaign in Central Europe, and also became more familiar with classically-inspired planning and architecture, which started to blossom in Sweden in the mid-17<sup>th</sup> century. The paper will consider the meanings and broader implications of the material and intellectual appropriation of European classical heritage in Sweden. It will be argued that the impact of classicism on diverse material practices must be considered and understood against the relational Renaissance/Baroque understanding of the world. Finally, the paper will explore how classically-inspired changes in material culture were dynamically linked to the perception and understanding of the world in early modern Sweden.

#### **POSTERS**

##### **A04.01-P-3: The Testimony of the Plans: Evidence for the Siege of Czech Towns during the Thirty Years' War with Case Studies from the Towns of Tábor, and Brno**

by [Tereza Blažková](#) (*Charles University in Prague, Faculty of Humanities, Czech Republic*)

This poster examines iconographic images as sources of evidence for town sieges during the Thirty Years' War. Plans from the 17<sup>th</sup> century can provide information about war events and strategy, but tend to be highly stylized, and often reflect the intentionally distorted view of the artist. The poster takes an interdisciplinary approach, and focuses on the critical evaluation of the plans, and how they may be used for the verification of war events, both in towns, and the surrounding countryside. This approach uses methods from historical cartography, iconography, art history, history, and field archaeology. The case study of two towns, Tábor, in south Bohemia, and Brno in south Moravia, illustrates how different approaches depict reality. Two depictions of the siege of Tábor show events at beginning, and at the end of the Thirty Years' War. The first depiction shows the Imperial army of General Marradas laying siege to the army of the Bohemian estates commanded by General Mansfeld, inside the fortified town of Tabor (1621). The second depiction of Tábor is from 1648, when the town was besieged and captured by the Swedish army. Both depictions of Brno are from the unsuccessful Swedish siege of 1645.

#### **A04.02-P-3: The Battle of Čáslav (1618)**

by **Petr Koscelník** (*The University of West Bohemia in Pilsen, Czech Republic*), **Michal Preusz** (*The University of West Bohemia in Pilsen, Czech Republic*)

This poster will examine one of the first battles of the Thirty Years War, the Battle of Čáslav, which halted the advance of the Imperial army on the City of Prague, in 1618. The poster will focus upon a series of field fortifications relating to the main battlefield, which have been re-discovered by combining evidence from contemporary diaries, old maps, and air photography. The poster will also present new evidence for a second phase of the battle, which took place around the town of Uhlířské Janovice. This second phase of fighting, which followed the main battle, has been identified by the mapping of field fortifications, and by the recovery of several bullets by a systematic metal detector survey.

## Session A05

### Barrow Landscapes and GIS approaches

Thursday, 5 September 2013, 14:00–18:30

Room: EU 106 (Building 1, ground floor)

**Organisers:** **Axel G. Posluschny** (Roman-Germanic Commission of the German Archaeological Institute, Germany) and **Quentin P. J. Bourgeois** (University of Leiden, The Netherlands)

Barrows, as burial markers, are ubiquitous throughout North-Western Europe. In some regions dense concentrations of monuments form peculiar configurations such as long alignments while in others they are spread out extensively, dotting vast areas with hundreds of mounds. These vast barrow landscapes came about through thousands of years of additions by several successive prehistoric and historic communities. By building a monument they modified the visual structure of the landscape, however slightly. And by adding a new mound they created complex monumental landscapes with a distinct palimpsest character.

This session aims to gather ideas and approaches to deal with these monuments and understand their particular distribution. Our focus is on how GIS can help us understand the role of these monuments in the landscape. Of specific interest to this session are topics addressing the reconstruction of these landscapes using 3D models and analyses. We invite topics addressing novel approaches to visibility analyses. For example papers exploring the role of (specific?) monuments being visible versus invisible and the construction of social landscapes. We are particularly interested in papers addressing the time-depth of barrow landscapes and its influence on analyses using spatio-temporal GIS, as well as those addressing the issue of scale within the barrow landscape.

We also encourage papers that try to incorporate perceptual approaches in general in a GIS-driven analysis.

#### **A05.01: Application of GIS techniques and 3D models to the study of the spatial distribution of the megalithic constructions on the north-east of the Iberian Peninsula**

by **Elisabet López** (*Autònoma University of Barcelona, Spain*)

The megalithic research in Catalonia is characterized by being mainly focused on the definition of the architectural types, the development of chrono-cultural explicative schemes and the study of the material documented inside. From other theoretical and methodological approaches, it is possible to approach the study of other issues not considered in the megalithism which permit delve into the structure and the socio-economic characteristics of the communities that built and used those megalithic constructions.

One aspect that has not been addressed thus far from the point of view of the social dimension is the social work invested in the construction. In this regard it is introduced a new variable: the volume of built spaces (chamber, corridor and mound structure); where this work is reflected. However, it is necessary to have systems that allow accurate volumetric calculations.

In this paper we present a methodological proposal. From a precise calculation of the volumes constructed applying 3D techniques, we perform a GIS analysis to know the spatial distribution of the megaliths from the investment of work of each case and so, study and consider interpretative hypothesis about how they are distributed in space in relation to the social work invested in its building.

#### **A05.02: Reconstituting Community: ArcGIS and Early Iron Age Social Organization in the Heuneburg Mortuary Landscape**

by **Bettina Arnold** (*University of Wisconsin-Milwaukee, USA*), **Kevin Garstki** (*University of Wisconsin-Milwaukee, USA*), **Matthew Murray** (*University of Mississippi, USA*)

This project consists of the digitization of burial data (locational and artifactual) from Tumulus 18 and Tumulus 17 in the Hohmichele mound group associated with the early Iron Age Heuneburg hillfort in Baden-Württemberg. A provisional comparison with several other tumuli in this mortuary landscape is planned depending on the availability of comparable data. Topographic and locational data entered into ArcGIS are used to construct a 3D model of the mounds prior to excavation as well as schematic representations of individual burials within each tumulus based on the spatial data obtained from digitized excavation maps. Spatial and attribute data for each tumulus, grave and artifact illuminate the three dimensional spatial relationships between graves and within, as well as between, tumuli. Complex querying of the data set can be used to identify temporal patterns of grave placement/artifact distributions, spatial orientation in relation to the cardinal directions as well as the central burial and other graves within the mounds, social patterning of

artifact assemblages correlated with the life history of each mound and possible familial relationships between individual graves and tumuli. This preliminary analysis also tests the potential of using ArcGIS to provide a spatial approach to the reconstruction of individual identity.

#### **A05.03: The Afterlife of Monuments in the English Peak District: A GIS approach to Early Bronze Age barrow placement.**

by *Alice Rogers* (University of Reading, UK)

British archaeology has a long history of barrow research, from early antiquarian excavations to modern studies harnessing the power of computer software.

This paper presents research looking at two barrow landscapes from the Peak District, England, an area with hundreds of barrows and a history of antiquarian investigation. The barrows were examined in terms of their placement within the landscape and how they related to the monuments already present, specifically a Middle Neolithic bank barrow and a Late Neolithic henge. Using a Geographical Information System, my paper considers the inter-visibility between the barrows and earlier monuments, the densities of the barrows around these focal monuments, and also the distribution of distinctive artefacts in the surrounding areas. These results are then placed within a theoretical framework looking at how monuments can become embedded within social memory.

Using a GIS approach to barrow landscapes allows us to begin to address concepts such as memory and the social creation of landscapes in the past. The results presented in this paper show how Early Bronze Age communities planned the placement of their funerary barrows both in relation to the monuments visible within the landscape and the very geography of the land itself.

#### **A05.04: Barrows in the identity politics of the Poštela hillfort (Slovenia)**

by *Dimitrij Mlekuz* (University of Ljubljana, Faculty of Arts, Slovenia)

As people create, modify and move through landscape, the mediation between spatial experience and perception creates, legitimates and reinforces social relations and ideas. Mortuary rituals are events where memorisation as well as selective forgetting takes place. Construction of memory is often a material practice, leaving traces in a landscape. Erection of barrows creates powerful visual remainders or material memory. Barrows link ancestors to the living and create places in the landscape, related to other places in different ways, through inter-visibility, connectedness or proximity. In this perspective landscapes, places but also bodies and identities emerge as products of practices, trajectories, interrelations and flows realised through movement. These relations can be weaved together in complex narratives.

In the paper we combine remote sensing data and a series of GIS analyses to explore how the relations between movement, visibility, proximity and connectedness of places, meaning and memory intertwine and create a “sense of place” in landscape around the Iron Age Poštela hillfort near Maribor in North-eastern Slovenia. The landscape around Poštela was used to express first of all the idea of group identity, but also of competing, fluid identities within the community, playing an active role in identity politics.

#### **A05.05: Walking along Ancestral Lines: Skyline analysis in the context of prehistoric barrow alignments**

by *Quentin Bourgeois* (Leiden University, The Netherlands)

Barrow alignments occur frequently throughout North-Western and Central Europe. There are indications that the earliest of such lines appear towards the end of the 4<sup>th</sup> and the early 3<sup>rd</sup> Millennium BC, but the practice is long-lived and continues until at least 1000 BC. These large man-made structures transformed how the landscape had to be experienced in a lasting way. Yet it is still relatively unknown when and where these alignments occur and what they represent.

An important observation is that these barrow lines frequently extend beyond a few kilometres, and because of that, it is often impossible to see the entire alignment within a single view. You have to walk along it to become aware of the extent of the barrow line. At the same time Skyline and Viewshed analyses hint at a visual hierarchy between burial monuments on the alignments, where some barrows are more visible than others, perhaps taking up a different role within the (social?) landscape. Both these observations reveal that the alignments shaped and guided how people moved through the landscape, walking along the burial monuments.

#### **A05.06: Perception, ideology and time: a GIS approach in Tagus River basin (Spain)**

by **Enrique Cerrillo Cuena** (Spanish Council for Scientific Research, Spain), **Raquel Liceras Garrido** (Complutense University, Spain)

During the last years, we have developed an intense fieldwork in the surroundings of one of the ancient fords of Tagus River (Cáceres province, Spain), where different antiquarians documented near a dozen megalithic barrows by the end of the 19<sup>th</sup> century. A critical issue for the archaeological analysis is that the area was flooded by a reservoir in 1970, disallowing us to get a detailed comprehension of the landscape.

A research strategy was designed to face the study of the river ford, that consisted in the excavation of several monuments, the systematic surface survey of adjacent areas and also the reconstruction of the original topography through digital photogrammetry and GIS applied to historic imagery. This information has provided a new picture of the necropolis, revealing temporal and architectural variance, different degrees of aggruppation and links to habitat, which contributes to state the variety within the structure of megalithic landscapes in a regional context.

In this communication we focus on the perception of the barrows through spatial analysis. By using fuzzy logic, we have checked how monuments might be perceived/visible in different scales. The persistence of the monuments organised the landscape through generations, propagating an ideological discourse, which is discussed here.

#### **A05.07: Approaching the social Iron Age landscape using GIS and LiDAR generated 3D models**

by **Ole Risbøl** (NIKU – The Norwegian Institute for Cultural Heritage Research, Norway), **Gro B. Jerpåsen** (NIKU – The Norwegian Institute for Cultural Heritage Research, Norway), **Troels Petersen** (NIKU – The Norwegian Institute for Cultural Heritage Research, Norway)

Burial monuments are important markers in the landscape that conjugate past and present. They hold a potential to acquire knowledge about how people related to landscape in prehistory although this relationship is complex and not straight forward at all. Based on the presence of both burial cairns and burial mounds in the region of Brunlanes in SE-Norway, we have carried out GIS analyses in order to approach the meaning behind the location of these two different groups of monuments in the landscape. The examination was conducted using a combination of GIS and LiDAR generated 3D models as a basis for view-shed analysis. In addition field-based visual landscape studies were carried out and documented. The comparison of the two groups has contributed with new knowledge about these monuments and how they relate to landscape. The results of the study will be presented with a particular focus on how the implementation of new methods like LiDAR can contribute to visual archaeological landscape analysis within a GIS environment.

#### **A05.08: Spatial approaches for the study of barrow landscape in the Upper Friulan Plain (North-Eastern Italy)**

by **Giacomo Vinci** (University of Udine, Italy), **Massimo Calosi** (University of Udine, Italy)

Our presentation will explore the diffusion of burial barrows in the Upper Friulan plain (North-Eastern Italy) during the first half of the 2nd Millennium B.C.

Thanks to a systematic review of mid-'900 topographic researches and fresh data collected by surveys and excavations carried out by the University of Udine in recent years, we are now able to outline a quite clear picture of the monumental landscape marked by the presence of several *tumuli*. After the burial of an eminent member of the community, these structures seem to have been at times used as ceremonial centres for a long span of time and possibly well into the MBA-LBA; then their final shaping partly overlapped the rise of the earthwork ramparts of the earlier fortified long-lasting settlements.

We intend to present here the results of a wide range of spatial analysis carried out on the dataset and a detailed DEM through the use of GIS-led cumulative visibility and point-pattern analysis (namely Local and Global Ripley's K) in a probabilistic framework based on Monte Carlo simulation. The pattern emerging from the distribution of *tumuli* suggest a high degree of control over the landscape likely reflecting territorial strategies managed by different tribe-based communities.

## POSTERS

### **A05.01-P-1: Open or denied access? Perception of barrow landscapes in Middle Pomerania (Poland)**

by *Lukasz Banaszek* (*Adam Mickiewicz University, Poland*)

Although barrow landscapes were presumably an accessible “products” of the culture, nowadays – in most cases in Poland – those landscapes are hidden within the forests. Thus, once open places were removed from the foreground of current perception. Moreover the potential of traditional archaeological prospection is of limited use in forests.

Airborne Laser Scanning is a method of a huge potential in surveying forested landscapes, allowing identification of archaeological objects, which topographic form remained. Interpretation of ALS products permits perceiving the landscape as a continuous phenomenon – an approach nearly absent in current Polish archaeological studies, mainly based on field-walking data.

The aim of this paper is to present the outcomes of GIS analyses conducted on vast barrow landscapes located in forested areas of Pomerania (Poland). Due to ALS products interpretation various archaeological objects were recognized. Results were integrated with field-walking data and put into historic land-use context obtained due to archive maps analysis. Studies show not only the relations between intertwined barrows, strongholds, historical roads and other cultural and natural features, but also aim to describe how those relations were preserved until nowadays. Furthermore the limitations of perception of barrows could be interpreted in particular moments of time.

### **A05.02-P-1: Cultural landscape research – a humanities-driven and hard science-based study. GIS platform for the “Malesija project” in Montenegro**

by *Urszula Bugaj* (*Polish Academy of Sciences, Poland*), *Małgorzata Chwiej* (*independent researcher, Poland*)

The impact of GIS application on archaeological methodology and – implicitly -social theory is yet to be determined but nevertheless it is growing each year with the development of technology.

Cultural landscape research gives a kind of “common ground” for humanistic disciplines (archaeology, anthropology, ethnology, sociology, history) on conceptual level. In consequence, there is a need to create a platform meeting the requirements of a complex research field on documentary level. The core properties of a landscape – space and time (scapes) – must constitute the integrative factors of the GIS platform (therefore: 4D). It has to enable the integration of data in order to analyze multiple and separable data-sets acquired with different methods by various disciplines. We adhere to the point of view that interdisciplinary data flow (communication) is indispensable in order to shift our cooperation on multidisciplinary level and to allow genuine changes in methodology. Thus incorporated can increase the efficiency of the GIS systems already used in archaeology and contribute to better understanding of the evaluated space.

We would like to present and discuss a GIS platform “in the making”, created for the ongoing, multidisciplinary landscape research in Dinoša, obš. Tuzi, Montenegro.

### **A05.03-P-1: Mobility and pathways in megalithic landscapes from Iberia: a GIS approach**

by *Enrique Cerrillo Cuenca* (*Spanish Council for Scientific Research, Spain*), *Alfredo Maximiano Castillejo* (*University of Cantabria, Spain*), *Miguel Ángel Moreno Gallo* (*University of Burgos, Spain*), *José Ángel Martínez del Pozo* (*Spanish Council for Scientific Research, Spain*), *Raquel Liceras Garrido* (*Complutense University, Spain*), *Rodrigo Villalobos García* (*University of Valladolid, Spain*), *Javier Basconillos* (*Spain*)

The link between pathways and barrows has been a common mechanism to elucidate the structure of megalithic landscapes in Iberia. Since the 1970's, barrows were presented as the landmarks that ruled the displacement of prehistoric people in their nomadic lifestyle as drovers. Nowadays, the nexus between pathways and barrows is far from being explained, and the analysis of Iberian megalithic landscapes has evolved to a more thoughtful stage where GIS has become the ideal platform to test such hypothesis. Moreover, the relationship between the pathways and other properties from landscape, as perceptual questions might be, has been reconsidered.

In this case, we present our recent works in two main areas from Spain: the Sedano (Burgos province) and Alconétar (Cáceres province) areas, where different approaches for linking displacement with the patterns of location of barrow have been tested. We will also discuss the importance of using different algorithms and analytical categories to enlighten what can be determined as mobility and how to make it quantifiable. We relay also in ethnographic sources to test models against the evidence.

#### **A05.04-P-1: Using a GIS tool to map the spatial distribution of barrows in the Ploiești Plain, Romania**

by **Alin Frînculeasa** (Prahova District Museum of History and Archaeology, Romania), **George Murătoareanu** (Faculty of Humanities, University Valahia, Târgoviște, Romania), **Mădălina Nicoleta Frînculeasa** (Faculty of Humanities, University Valahia, Târgoviște, Romania), **Bianca Preda** (Prahova District Museum of History and Archaeology, Romania)

The study aims to use GIS techniques in order to evaluate the barrow graves of the Ploiești piedmont plain – part of the Lower basin of the Danube river that is very rich in Bronze Age burial mounds – as related to the objective reality resulting from the morphological evolution of the region, which is complicated by anthropogenic activities. A GIS modeling was developed using ArcView, starting from a set of reliable archaeological data and a series of environmental variables. Furthermore, in order to create a 3D view of the map and tumuli Global Mapper was used.

The purpose of this approach was to reconstruct the mechanisms underlying the barrow burial – relief correlation, considering the relief as a factor both favorable and adverse for identifying the demographic trends of the tumuli evolution. The morphology of the barrow graves was established and their spatial distribution was analysed by determining the spatial relationships between graves, and between them and the environment. The resulting analytical map provided a permanent overview which cannot be detected in the field, allowing the integration of the obtained model into a dynamic micro-regional system, important to contextual comparative studies.

#### **A05.05-P-1: Lines of Power: Iron Age Landscapes in SE Kazakhstan**

by **Perry Tourtellotte** (Sweet Briar College, USA)

Since 1994 the Kazakh American Archaeological Expedition has conducted archaeological surveys and excavations in the Talgar region 20 km east of Almaty, Kazakhstan. In 18 years, we have located over 70 Iron Age settlement sites and more than 500 burial kurgans. These sites were recorded with GPS devices and entered into Arcview. The GIS database indicates the existence of linear clusters of kurgans, generally forming a north-south orientation. These kurgans, range from 3–7 meters high and over 30 meters in diameter, are the most visible remains of the Iron Age landscape. In contrast, the settlement sites are invisible appearing only as scatters of sherds and animal bones found in plowed fields.

Using Google Earth images as a tool we were able to locate sites found on surveys and to identify new areas to examine on a daily basis, increasing the accuracy of our survey methods. Google Earth images also provided a much larger regional coverage, beyond the circumscribed the Talgar fan. This paper explores the use of Google Earth images, on-the-ground surveys, and topographic maps in order to reconstruct burial mounds in Talgar and the adjacent regents along the basis of the Tian Shan Mountains.

## Session A06

### Bodies of Clay – On prehistoric humanized pottery

Thursday, 5 September 2013, 08:30–18:30

Room: EP 208 (Building 1, 1st floor)

**Organisers:** **Heiner Schwarzberg** (Munich University, Germany), **Valeska Becker** (Münster University, Germany) and **Krum Bacvarov** (Bulgarian Academy of Sciences, Bulgaria)

At least since the very beginning of the usage of containers made of burned clay, vessels have been associated with the general shape and parts of the human body. Even in today's terminology they are divided into elements like neck, shoulder and body.

This understanding culminated on one hand in prehistoric communities' production of human shaped pottery which might be understood as a part of the spectrum of figural art as well as in the application of "everyday pottery" in special functional contexts related to the human body, e. g. in burials or used at exceptional occasions in the human life cycle.

Starting from the European Neolithic, this session aims to focus on diachronic archaeological patterns and contexts as well as on the theoretical background of this particular type of container in order to shed some light on similarities and differences through the ages and to understand possibilities and limits of interpretation.

#### **A06.01: Forming and Transforming the Human Body in the Near Eastern Neolithic and Chalcolithic**

by **Peter F. Biehl** (*State University of New York at Buffalo, USA*), **Ingmar Franz** (*Albert-Ludwigs-University, Germany*), **Patrick T. Willett** (*State University of New York at Buffalo, USA*)

This paper discusses how studying visual representations of the human body from the Neolithic and Chalcolithic in the Near East can aid us in understanding identity and personhood in the past. The paper looks at anthropomorphism and miniaturization as well as at embodiment and entanglement of the human figure as represented on pottery especially from Çatalhöyük in Central Anatolia. It will also scrutinize corporeal as well as ideational and symbolic attributes of the visual body in order to better understand identity and personhood in the 7<sup>th</sup>–6<sup>th</sup> millennium BC.

#### **A06.02: Water to Wine – Carrying Vessels in the European Neolithic and Chalcolithic**

by **Heiner Schwarzberg** (*Ludwig-Maximilians-Universität, Germany*)

Combined vessels ("Etagengefaesse") with anthropomorphic representations as well as vessel-holding hollow and solid human-shaped clay statues belong to the figural set of the South East and Central European Neolithic and Chalcolithic. This paper tries to give an overview about the chronological development, typological and contextual features as well as cultural implications and interpretational approaches of these particular types of figural art which are connected with the depiction of carrying vessels with different contents in putative ritual contexts.

#### **A06.03: Neolithic pots with human characteristics: paths and vicious circles in archaeological thought**

by **Evanqelia Voulgari** (*Aristotle University of Thessaloniki, Greece*)

In almost all archaeological approaches anthropomorphic pots or pots decorated with human characteristics, despite their variety, are detached from the rest ceramic assemblage and are examined as a special category of artifacts. Based on a contemporary perception about representation and influenced by the strong significations imposed on human figure by our cultures, archaeological approaches are differentiated from one another only as to the interpretation of the self-evident anthropomorphism of these pots. It has been accepted that pots, both universally and cross-culturally, are identified with human body through their structure and functionality. The fact that some cultures added to these artifacts some extra features of human beings is considered to be a corollary that enhances the above simulation without provoking the question why someone needs to humanize "more" something that is already "humanized" or questions regarding the universality of human and non-human characteristics and qualities.

This paper proposes a theoretical and methodological approach pursued in the case of Dispilio Neolithic decorated shards, in an effort to shed light on the social significance of pots decorated with human characteristics while involved in social practices or enmeshed in relationships among pots and producers.



#### **A06.04: The social role of pots within Linear Pottery**

by **Ivan Pavlů** (*University of Hradec Králové, Czech Republic*)

Most of world languages utilize names based on human body parts to describe formal parts of ceramic vessels. The use of these terms suggests that vessels are conceptualized as human bodies. In our study we focused on the relationship between vessel segments and various types of Neolithic houses with respect to this association. In our study we focused on the relationship between individual attributes of ceramics (segments, functional forms, decoration and decoration techniques of linear ornament) in the context of three types of houses. Using the method of multiple correspondence analysis and aforementioned characteristics, we examined and interpreted different roles which ceramics played for the inhabitants of these houses. The social role that we have detected contributed to the differences in social status of the houses within the settlement. Consequently, the inhabitants of particular types of houses can be considered as economically distinct groups, which differ in subsistence strategy depending on their genetic origin.

#### **A06.05: The Corporeality of Vessels: Neolithic Anthropomorphic Pottery in the Republic of Macedonia**

by **Goce Naumov** (*University of Skopje, The former Yugoslav Republic of Macedonia*)

Human body was not only portrayed on the Neolithic figurines, but also used as a metaphor for new setting and engagements supported by the idea of domestication. The introduction of farming as a means of accumulation and permanence required symbolic manifestation of such complex economic and social concepts. Therefore, a vast number of ceramic objects were integrated in order to expose the importance and necessity of durability of what was stored or dwell inside houses. Almost any item or structure with ability to contain was symbolically perceived throughout an image of human body, thus was represented by the anthropomorphic objects such as: vessels, house models, 'altars', oven models or rhyta. As being frequently employed in household activities, the vessels were visually most direct manifestation of human body and consequently involved in broader symbolic or ritual practices. The deposition of groceries, items or even deceased infants and body parts inside vessels contributed towards its conceptual humanization and equitation with corporeal functions. Therefore, particular Neolithic anthropomorphic vessels and archaeological contexts in the Republic of Macedonia will be presented in order to assert the intermediation of such pottery within dynamic social, economic and symbolic processes.

#### **A06.06: Human shaped pottery from Lower Danube, 5th mill. BC. Hierarchy and function**

by **Radian-Romus Andreescu** (*National History Museum of Romania, Romania*)

Archaeological researches from Lower Danube in the settlements belonging to Gumelnița-Karanovo VI culture (5<sup>th</sup> mill. BC) revealed many vessels with human shape, some of them having a remarkable artistic value. The aim of this paper is to analyze also the archaeological context of these artifacts in order to try to understand their role within the Neolithic civilization. The archaeological context in which these vessels were discovered is very varied, from fortunate discoveries to their discovery within burnt houses. The diversity of the anthropomorphic vessels, from masterpieces of prehistoric art to extremely schematized pieces, could reflect either certain social stratification or hierarchy of cultic ceremonies. Thus the vessels with human shape of a high artistic value could belong to individuals with a high position in society or maybe invested with religious responsibilities. Their use was probably related with certain events which involved the whole community or even a group of communities. The context of their discovery and their association with other artifacts, including gold pieces, underlines their important role played within the society. Such vessels could therefore have a cultic function representative for the whole community.

#### **A06.07: The representation of human body and its clothes in the Tripolye-Cucuteni Art**

by **Maria Mitina** (*Saint-Petersburg University of Humanities and Social Sciences, Russian Federation*)

The interpretation problem of Neolithic – Chalcolithic figurines decoration is still unsolved. Handling of the problem helps to develop directions for future research: real costume reconstruction, ties between figurines decoration and ceramics ornamentation, or analyze of signs. Besides decoration point of view [Новицкая 1960; Порожева 1983] there are other opinions (as representation of tattoo [Грязнов 1964: 72–78; Порожева 1983:121] or ritual swaddle of deceased person [Gheorghiu 2010: 61–72]).

The ornamentation is conditioned by some facts: stylized design, weaving and to my mind more important fact – that namely human body is the main aim for master, clothes – as a postprimary element. That's why dress is not volume but flat. Here we can see characteristic of human body understanding and representation in the Tripolye-Cucuteni art

[Мовша 1969; Bailey 2005]. So, costume is some kind of thin shell covered body [Паларыта 2012: 229]. It is no wonder, that exactly costume is a gender sign. According to Tripolye-Cucuteni and Balkan Neolithic material painting of genitals is not important for master [Nanoglou 2010].

So, identify figurines decoration as image of clothes we can determine future research of figurines as art objects, where decoration is the important attribute in the iconography.

#### **A06.08: Face vessels and anthropomorphic representations on vessels in Neolithic Italy**

by Valeska Becker (*Westfälische Wilhelms-Universität Münster, Germany*)

Italy is somewhat of a blank spot as far as its cultural relationships within in the country and to the surrounding cultures of south-east Europe and southern France are concerned. This is also true for figural finds and, especially, face vessels.

Therefore, this presentation will give, against the respective cultural background, an overview of Italian face vessels and vessels with anthropomorphic depictions. These last can be further divided into painted, incised or stamped representations resp. applications of human representations. Anthropomorphic representations on vessels are not evenly spread within the country; finds are densely concentrated in south and central Italy, where they are related to the Guadone and Lagnano/Masseria La Quercia phases of the Impresso pottery as well as the later developments in this area. Only single finds date to the oldest phase of the Impresso pottery. Almost no such finds occur, however, in the northern part of the country.

The origin of these depictions is still discussed. Some seem to display influences from south-east Europe, others are without any parallels and may be local inventions. Oddly enough, some representations resemble motifs from the Linear Pottery Culture, but an explanation of how such long-distance relations were established is still amiss.

#### **A06.09: Anthropomorphic pottery from western Europe: between tradition and innovation**

by Johanna Recchia-Quiniou (*University Of Montpellier III, France*)

During Neolithic, anthropomorphic characters of pottery from Western Europe are rare. Indeed, compared to the abundance of production from Balkans, those evidences are discrete. Thanks to different ethnographic studies made by the past about potters and pottery, we tried to expand our definition of anthropomorphic character's pottery, beyond the only ostentatious aspect. Therefore, we propose a new classement of those ceramics, that is, more than a typology, a semiology. So that, we try to expose a vision more respectful of social aspects of those objects.

We will apply this demonstration, proposing to define which elements permit to affiliate this anthropomorphic pottery to the ceramic's production of Balkans. At the same time, we will look for original expressions that were developed gradually during Neolithic. Between influences and innovations, anthropomorphic pottery found different original ways of expression, that are a part, in material culture, of a larger expression of symbolic aspects of Neolithic's societies, from early Neolithic to the beginning of Chalcolithic in western Europe.

#### **A06.10: Clay anthropomorphic images of Jomon period, Japan**

by Elena Solovyeva (*Institute of Archaeology and Ethnography, Siberian branch, Russian Academy of Science, Russian Federation*)

Art, and in particular, clay figurines, – is such thing which doesn't represent personality. Studying sculpture gives the chance to understand and reconstruct the collective spiritual representations.

The figurines represent a steady image which can be available to the analysis through symbols. Therefore, reconstruction of the semantic contents has to go retrospectively – from the finished work of art to its ideological sources, translating symbols into the modern language. Symbols appear groups, constructing symbolical compositions. From the symbolical point of view clay is associated with a matter, the beginning and a source of all.

Making a huge number of clay figurines can be considered not accidental for dogu along with the existence of wooden, bone and stone figurines.

Besides, it is quite possible to view a series of Jomon period vessels as anthropomorphic clay images. The tradition of examining of a vessel by analogy to a human body has an old story. During the Jomon period in Japan there are known the vessels which decorative elements can be interpreted as the image of human eyes. In that case, these decorative motives can be an additional sign of an anthropomorphic sense of ceramic vessels.

#### **A06.11: Humanized Vessels of the Early Bronze Age**

by Mehmet Özdoğan (Istanbul University, Turkey)

Pottery vessels with anthropomorphic features have a rather peculiar and uneven distribution among the Early Bronze Age cultures of Western Anatolia and of Southeastern Europe. Along with those of the Baden culture that are slightly earlier in date, Troy stands out as the most significant among Early Bronze Age sites revealing vessels with humanoid features. Open bowls with human face representations of Troy I, and in particular vessels and lids of Troy II-IV of humanoid depictions are among the conspicuous components of Trojan pottery assemblage. However, such features are either under represented or totally absent in other contemporary sites. Concern on the Trojan vessels have been mainly on their stylistic depiction or on their possible affiliation with the Baden samples; very little has been said on their contextual setting or of cultural significance. During the last decade, our knowledge on the Early Bronze cultures of Western Anatolia that had been at a standstill for almost half a century, has been considerably increased, now making it possible to reassess socio-cultural and symbolic framework of the hitherto poorly understood urbanisation model of this region. The paper aims to contextualize these vessels within the newly emerging picture of the Early Bronze Age.

#### **A06.12: Anthropomorphic Vessels in Bronze- and Iron Age Europe**

by Jutta Kneisel (Johanna Mestorf Academy University of Kiel, Germany)

In the period of Late Bronze Age and Iron Age, the phenomenon of the face urns occurs in Europe. In widely separated areas of central and northern Europe urns with faces find their way into the funeral practices of the respective communities. We know such vessels from Scandinavia, Northern Germany as well as the Harz Mountain region and northern Poland. The most of the vessels with anthropogenic expressions can be found, however, in northern Poland.

The appearance of the faces is often very different in each region. The spectrum ranges from clear plastic shaped faces, over simple abstractions up to hidden faces which could at first glance not be recognized as such.

This on the one hand raises the question of the mechanisms of perception of faces and the importance of faces in the ritual context of the burials – because, with a few exceptions, these vessels never appear in settlement contexts. On the other hand, there is the question of the origin of facial ornamentation and the connection between the wide spread areas up to the group of Italian canopy.

For both questions, it is necessary to deal with the significance of single elements of the face.

#### **A06.13: No head, but shoulders, knees and toes: anthropomorphised pottery in early Iron Age central Europe**

by Katharina Rebay-Salisbury (University of Leicester, UK)

Anthropomorphised pottery in the Kalenderberg group (Austria, Slovakia, Hungary) has long been dismissed as an occasional oddity. It is usually comprised of common types with additions such as feet (e.g. Statzendorf, Gemeinlebern) or hands (e.g. Marz, Nové Košariská) and appears primarily in cremation graves. This paper will scrutinize the contexts in which anthropomorphised pottery is found to better explain why they have been added to the grave good assemblage and which role it played in life and death. Contemporaneous clay figurines, zoomorphic and everyday pottery types will be used as comparative material. The paper will further analyse the relationship between the 'bodies of clay' and the ways human bodies were understood and treated in the early Iron Age. Some decorative elements of pottery, for example, can be likened to the way jewellery is worn on the body; others seem to mimic weaving patterns known from the Hallstatt salt mines. Just as bodies, pots may be treated in a range of different ways after the death of a person – they may be burnt, smashed, collected and laid out in the grave. Pottery as a potential stand-in and substitute for elements of the person will be put forward to debate.

#### **A06.14: Faces from the past. Face urns of Pomeranian Culture and an idea of man in early Iron Age.**

by Katarzyna Ślusarska (University of Gdańsk, Poland)

Face urns appeared in the early Iron Age at the quite limited area of Pomerania and adjoining region of northern Greater Poland. Genesis of this phenomenon is still widely discussed in central-European archaeology, and though there are no consensus in this matter, they should be treated as an element of deep changes concept of human being that have begun with the dawn of new age, Iron Age.

The main aim of this paper is to test the possibilities of re-construction (or re-creation rather) of model of human being and the vision of human fate among early iron age societies of Pomerania based on analysis of face urns, their context, form and ornamentation.

#### **A06.15: Extending a Hand: Arm-shaped vessels in the Hittite cult**

by [Turkan Pilavci](#) (*Columbia University, USA*)

The enigmatic vase type belonging to the Hittite Empire of the mid-second millennium BC, namely the Arm-shaped vessels have been studied in terms of the archaeological contexts, chronology and the foreign type of ware, Red Lustrous ware, to determine its function, origin and distribution patterns. This paper, however, attempts to amend the disengagement of the form from the overall meaning and the use value of these vessels. The vase consists of a long hollow tube terminating in a hand holding a small cup placed in its palm. The stylized tube, standing for the stretched arm, is in contrast to the detailed fingers and nails, shown highly modeled. In this study, the form of the vessel is realized as the extension of the human body in a cultic context, reaching out from the body to the realm of the sacred, possibly linking the two worlds. Therefore, the doubling of the act of libation through the Arm-shaped vessels and their agency in the Hittite cult will be underlined. The purpose is to understand the meaning and the performative role of these Arm-shaped vessels through a close study of their form in relation to the human body.

#### **A06.16: Bodies of Flesh within Bodies of Clay: Early jar burial tradition in Western Asia and Southeast Europe**

by [Krum Bacvarov](#) (*Bulgarian Academy of Sciences, Bulgaria*)

Jar burial tradition appeared in the late seventh millennium BC in the Northern Levant, and soon spread over the Southern Levant, Anatolia, and Southeast Europe. Throughout its early development, this practice included primary and secondary/delayed burial, as well as cremation burial, but in the beginning, most common were burials of infants in jars, often found under house floors.

This presentation will focus mostly on two interrelated aspects of early jar burial tradition: (1) the interpretation of burial jars, and (2) the special status of the buried individuals, and the special treatment they received. Several interpretative scenarios will be tested based on evidence from various sources, including ancient texts and aDNA analyses.

#### **A06.17: Neolithic and Chalcolithic Jar Burials on the Lebanese Coast (6th–4th millennium BCE): The Case of Byblos and Sidon-Dakerman**

by [Gassia Artin](#) (*Archéorient, Université de Lyon 2, France*)

The interpretation of the Levant's funerary assemblage from the beginning of the Neolithic until the end of the Chalcolithic and the evolution observed in the funerary practices is still problematic, due to the limited number of excavated sites.

The fourth millennium B.C. is an important and complex phase in the evolution and the development of prehistoric societies in the Levant. During this period some traditions such as the production and use of chipped stone tools persisted but innovations in the development of new types of artefacts, funerary practices and dwellings demonstrate that a new economic, social and urban organisation was emerging.

This period is best illustrated by two well-known settlements, which will be discussed in the paper: Byblos (Dunand, 1973; Artin, 2009), and Sidon-Dakerman (Saidah 1977; 1979). Byblos, which has been almost entirely excavated is characterised by both dwellings (houses, silos and paved roads) and 2097 funerary structures, mostly jar burials and an exceptionally rich and varied corpus of grave goods (ceramic, metal, stone objects, beads and personal ornaments). Furthermore, Sidon-Dakerman, located south of Sidon and at 70 kilometres south of Byblos has been only partly excavated and revealed a fortification wall, funerary jars and dwellings.

#### **A06.18: Child-Burials; a Funerary Practice in the Middle Nile Region (Sudan). Evidence from the Late Neolithic Site of es-Sour**

by [Azhari Sadiq Ali](#) (*King Saud University, Saudi Arabia*)

At present the earliest evidence of pot-burial in the Middle Nile Region goes back to the Late Neolithic (5000–3000 BC). Most new findings come from es-Sour, a Late Neolithic site near Meroe discovered by a team from the Department of Archaeology, University of Khartoum. The early pot-burial development in the Middle Nile Region displays two distinct

chronological levels: A Late Neolithic core area in el-Kadada and es-Sour and; Later post-Neolithic manifestations scattered in Lower Nubia. The practice is known to have continued into the C-Group (2250–1500 BC), where pot burials were made outside the family tomb, and beyond. Other later evidences, dated roughly to the Christian period 500–1500 AD were documented on site 8-B5.A in Sai. In modern times, infant-pot burials are practiced today near Old Dongola (north Sudan), where new-born dead infants are placed inside *qadus* (a pot related to irrigation activities) and buried near the family houses. It is obvious, on the current evidence, that the sites of es-Sour and el-Kadada represent the oldest attestation of pot-burials along the Nile Valley known so far. The es-Sour dates are younger than those of el-Kadada, though this does not prove that the origin of this practice is to be sought in the latter site.

## POSTERS

### A06.01-P-3: Human shaped pottery from Sultana-Malu Roșu tell settlement

by **Vasile Opris** (National History Museum of Romania, Romania), **Theodor Ignat** (Museum of Bucharest, Romania), **Catalin Lazar** (National History Museum of Romania, Romania), **Radian Andreescu** (National History Museum of Romania, Romania)

The Eneolithic tell settlement from Sultana-Malu Roșu (Southeastern Romania) is a special case in the overall framework of the Kodjadermen-Gumelnița-Karanovo VI cultural complex, largely due to the complexity of a great number of anthropomorphic vessels discovered here. Due to their uniqueness, some vessels discovered in the settlement ended up in the literature under specific names such as *The Goddess of Sultana* or *The Pot with Lovers*. The aim of this poster is to present the human shaped pottery from Sultana-Malu Roșu in various aspects. The fine aesthetics will be highlighted through photos and the possible contextual and functional interpretations will be textually displayed. An important part in the economy of the poster will have the parallels with similar findings from others Eneolithic settlements in Southeastern Europe.

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### A06.02-P-3: Body Ornamenting Items Represented on the Cucuteni-Tripolie Anthropomorphic Statuettes

by **Senica Turcanu** (“Moldova” National Museum Complex of Iași, Romania)

Although, usually, deities of Cucuteni-Tripolie pantheon are shown in the sacred ritual nudity, sometimes, artisans of Cucuteni-Tripolie civilization did not resist the temptation to embellish the divinity with clothing items, hair styles or jewelry well known to them, with various degrees of stylization. It was considered that Cucutenian-Tripolian statuettes were embellished by their artists with the most precious jewelry known or created by them.

The paper aims at achieving an analysis of the body ornamenting items present on the Cucuteni-Tripolie anthropomorphic art. This important source of documentation, corroborated with the information provided by the analysis of the items themselves, allows us to visualize the types of body ornamenting items known by the Cucuteni-Tripolie communities.

## Session A07

### Built environments and human use of space: theories, methods and case studies

Thursday, 5 September 2013, 08:30–16:00

Room: EP 110 (Building 1, ground floor)

**Organisers:** **Monika Baumanová** (University of West Bohemia in Pilsen, Czech Republic), **Karolína Pauknerová** (Charles University in Prague / Czech Academy of Sciences, Czech Republic) and **Hanna Stöger** (Leiden University, The Netherlands)

The session seeks to explore the mutual relationship between the built environment and the human use of space. In addition, it strives to further the dialogue between different theoretical concepts and analytical methods that have been developing in the present paradigmatic pluralism. We welcome presentations adopting a broad range of theoretical and methodological perspectives (Network analyses, GIS, Space Syntax, Semeiotics, SCA etc.). Past space can be examined at different scales ranging from methods focused on the distribution patterns of movable artefacts to the analyses of the spatial organisation of buildings and settlements, or whole regional complexes. We understand built environment, in a very general way, as an artefact; i.e. any spatial structure created/generated by humans. This can include individual houses, settlements and entire cities, and also burial mounds and enclosures, as well as building materials, styles and surface treatment, or even the spatial aspects of production and consumption of food and drink. The decisive factors linking the different approaches are the focus on space as an object of study in its own right and the mutually influential relationship between space and those who use and produce it.

The issues to be explored could include:

- What are the possibilities and limitations when reconstructing the built environments?
- Do archaeological data allow us to go beyond economy and topography? If so, in what ways?
- What is the relationship between the built environment and agency?
- Are past people's phenomenological experiences of built environments available to us?
- How does the built environment reflect changing social rules?
- How should we interpret the process of building and how can we cross the boundaries between "function" and "style" when analysing structures and settlements?

The specific case studies presented can be focused on any period in the past and be taken from any part of the world. However, all proposed papers should clearly promote a spatial approach.

#### **A07.01: The extended biographies of Iron Age roundhouses and the role of memory in everyday life: A case study from Broxmouth, south-east Scotland**

by **Lindsey Buster** (University of Bradford, UK)

Reanalysis and publication of Broxmouth hillfort, which contributed much to the development of Iron Age studies in south-east Scotland, has allowed for the application of new theoretical and methodological approaches to a thirty year old archive. The topic of my doctoral research, and of this paper, is the collection of eight surviving roundhouses which represented the last Iron Age activity on site (100/60 cal BC – cal AD 155/210). These buildings comprised a range of morphologies, in stone and timber, and though similarities existed between several of them, no two were exactly the same. A major feature of the stone-walled structures was their periodic rebuilding. AMS dates suggest that remodeling of these roundhouses took place on a generational basis, and thus it appears to have been associated with the renegotiation of household identities. New identities also made reference to past generations, however, through the retention of old structural fabric, and through repetition in the content and location of structured deposits. This paper will highlight the potentials of a biographical and materiality approach to the study of Iron Age roundhouses, in demonstrating that they were not passive backdrops to human existence but active contributors to, and shapers of, prehistoric social identities.

#### **A07.02: Shared Values**

by **Gail Higginbottom** (The Australian National University, Australia)

With the west now mooted to be the first region of megalithic culture in Britain, 2000 years later this region appears to display a predominant use of linear F-SS monuments especially the simpler varieties like single standing stones (SSS) and short stone rows (SR) (Burl 1993 and Hunt 1987). Such monuments were able to alter natural places more enduringly.

ingly than the earthen or wooden monuments that appeared shortly before, after or even concurrently across Scotland, with new stone constructions continuing for more than 2000 years (approx 3000–800 BC). These can appear on their own, together with other standing stones or in association with other monuments (like tombs and cairns). Combining archaeological finds, statistical analyses and the application of 3D technology, especially developed for this project, it shall be demonstrated how people, monuments and the natural environment were used to create cultural landscapes embedded with a shared cosmological understanding across western Scotland and how this persisted across the millennia.

### **A07.03: The appropriation of settlement space in Western and Central Europe during the metal ages**

by ***Caroline von Nicolai*** (*Ludwig-Maximilians-Universität München, Germany*)

Fortified settlements – hill forts as well as enclosed farmsteads – are often thought to be evidence of the desire to protect a community against outside attacks. However, erecting significant physical settlement boundaries was also an important means in prehistoric times to take possession of a certain space, to create a sense of coherence and to strengthen the identity of the community who built and used these monuments. Within these lines of enclosure, certain social, political, economic and religious rules were henceforth applied. The strong emphasis upon settlement boundaries during the metal ages is highlighted by the ritual activities that were performed cyclically or at special occasions close to and in relationship with these boundaries and that are attested in form of special deposits, often including bronze and iron items, as well as human and animal burials and disarticulated remains. This paper thus aims to show how Bronze Age and Iron Age societies in Central and Western continental Europe used to appropriate and define their settlement space by depositing different objects close to important settlement features like walls, ditches and entrance gates.

### **A07.04: Spatial analysis of Early Bronze Age settlements**

by ***Markus Spring*** (*Zurich University, Switzerland*)

Whether on the wide Avenue des Champs-Élysées in Paris, a village square in a rural community or in a narrow and winding lane of a Medieval Town, it is the open space through which we go and experience a human settlement the most. In this open spaces, encounters and interactions between inhabitants of the settlement themselves as well as between inhabitants and strangers take place.

In the mid 1970s, British architects Bill Hillier and Julienne Hanson started to develop graphic-numeric methods to analyse the syntactic properties of open spaces in settlements. These methods form today's basic tools of modern town planning to facilitate human-to-human interactions.

The proposed paper takes some of these methods to look into prehistoric settlements. It uses a selection of fortified Early Bronze Age lakeside dwellings dating to about 1650 BCcal forming a cross-section from Poland to South Germany and Switzerland. These settlements show similarities but also distinct differences in the arrangement of their buildings and therefore the open spaces they create. The paper focuses on these open spaces and analyses, whether and to what degree the selected settlements meet this task of a double inhabitant-inhabitant respectively inhabitant-stranger interface.

### **A07.05: Elucidating different spatial functions and labour processes at the house building Circle Cartailhac (Balearic Islands, Spain): a zooarchaeological perspective**

by ***Carlos Tornero*** (*Museum National d'Histoire Naturelle UMR 7209 CNRS/MNHN, France*), ***Lidia Colominas*** (*University of Cambridge, UK*), ***María Saña*** (*Autonomous University of Barcelona, Spain*), ***Elena Sintés*** (*Institut Menorquí d'Estudis (IME), Spain*)

*Torre d'en Galmés* is one of the most important prehistoric villages in all Balearic Islands. During *Post-Talayotic Phase* (550-123 BC) the settlement was organized by the construction of monumental cyclopean houses called "Circles". In 2008 new archaeological field works started in one of the best preserved houses of the village, the called Circle Cartailhac (first half 3<sup>rd</sup> century BC – end of 1<sup>st</sup> century BC). Those works documented a high internal division, with more than 15 different areas associated to different functions and labour purposes (Sintés & Isbert, 2009).

The analyses of faunal assemblages recovered on soils linked to the occupation of the house allowed us to study the exploitation of animal resources and the management of domestic animals (Tornero et al. 2011). We evaluated now the relationship between characteristics of faunal assemblages and functions and labour processes developed at house. Different attribution to areas where food processing labours were done (culinary, butchery and storage), areas

linked to consumption of food, areas related with the production of objects from animal resources (wood, tools) or areas for keeping animal alive was considered. Results deal with the spatial organization of those buildings and distribution patterns of the main economic labour processes.

#### **A07.06: Ancient Necrogeographies in Southeastern Sicily during the Great Greek Colonization**

by Kerstin P. Hofmann (Free University Berlin, Germany)

The spatial concepts of death visualized and materialized in the context of rituals are manifold and they are often thought to convey identity. It is, therefore, particularly interesting to study the development of various spatial funerary practices within the scope of migration processes using the example of South-Eastern Sicily during the so-called Great Greek Colonization. Applying a cultural-semiotic and sociological spatial approach and referring to the terms of 'heterotopia' and 'liminal spaces', I will define cemeteries as institutionalized social spaces of death (cf. Löw 2001; Huber 2009). Due to permanent markings, the burial grounds as communicative spaces become places with having their own history. They can be regarded as 'locale' (Giddens 1984) or 'action settings' (Weichhart 2003). After the establishment of *apoikiai* in South-Eastern Sicily two different necrogeographies can be distinguished: the 'drive through'-cemeteries with single graves and the 'climb in, dead-end'-cemeteries with chamber tombs for collective burials. The choice of particular burial practices was nonetheless probably made individually suggesting societies that do not determine burial rituals in an authoritarian manner, but permit plural discourses on identity. Therefore, it seems that the constitution of this two collective identities is closer to multiplicity rather than to totality.

#### **A07.07: The Spatial Relations of Roman Neighbourhoods in Ostia**

by Johanna (Hanna) Stöger (University of Leiden, The Netherlands)

The proposed paper presents a Space Syntax view on a Severan neighbourhood in Ostia, the harbour-town of Rome. For the first time the cityblock (Insula IV ii) has been brought together, not only including all its buildings but addressing the Insula as a collective spatial entity. The Insula's spatial organization will be presented together with an evaluation of how it functioned as an urban neighbourhood. The study will address how and to what degree the neighbourhood responded to infrastructural demands from the city, and how it related to the demands of the local residents. The study will not only explore the Insula's internal spatial organization but also its 'Spatial Relations' with the surrounding public space and the neighbouring areas. The paper will address the degree of spatial and visual integration between interior and exterior spaces and will assess the embeddedness of the Insula within urban amenities reachable within various radii of convenience. All spatial approaches will collectively inform our understanding of how the neighbourhood related to the Human Use of Space.

#### **A07.08: Street as a space. The case of Palmyra (Syria)**

by Marta Zuchowska (University of Warsaw, Poland)

Although streets are essential part of the city structure, there have been relatively little studies focused on the streets themselves and their particular role in the urban life. Sometimes they turn attention because of having special function, commercial or religious, but generally, we usually see them as empty spaces between the buildings. These empty spaces however can have different functions and meanings for the city inhabitants. They can be part of "no one's space", "public space" or even, sometimes "private space". They can link or divide areas and they can be used to control the urban space.

In present paper I'd like to analyse the changes of the street organisation in Palmyra in context of general urban development. Starting from the Hellenistic period up to the beginning of Islam, layout of the streets grid reflects not only development of the city spatial organisation, but also transformation in the concepts of urbanism and the vision of architects. Research on the streets of Palmyra shows the changes in the function of street as a space, development of communication in the city, but also reflect a dynamic transformation in the social aspects of the city life.



### **A07.09: How private was the Roman Private Bath? A Spatial Enquiry of Private/Public**

by [Kristian Reinford](#) (*Akershus fylkeskommune, Norway*)

#### **How private was the Roman Private Bath? A Spatial Enquiry of Private/Public**

Built environments should be understood, if possible, through the rituals performed within them. In our modern world, the perception of what is private or public spaces are clearly marked. This is apparent through the way our world is organized, how we live our lives, do our daily deeds and adjust to other people. In Roman society, it seems, that pronounced distinctions of what was perceived as private or public were vague, and in many instances non-existent. The proposed lecture shows through a sample of seven private bath suites of Pompeii dated to the late republic, that Roman distinction of space was made according to class, gender and rank, rather than by distinctions of private/public. Three theories and methods are adapted: 1) the *space syntax* approach treats spaces as structured patterns of movement and encounter, and make a good starting point for further analysis. 2) Andrew Wallace-Hadrill's *cross-axis diagram* shows that levels of social encounters could be established by separating the public spaces in a house from the private ones, and the grandly spaces from the more humble ones. 3) Rasmus Brandt's model based on *movements* within the house shows its use and its organization of space.

### **A07.10: Opening doors – entering social understandings of the Viking Age longhouse**

by [Anna Severine Beck](#) (*Museum Sydøstdanmark, Denmark*)

"Opening doors" is often used as a metaphor for seeing the world in a new perspective – but studying doorways can also quite literally give new perspectives on houses, people and how they interact with each other.

A doorway represents both an actual construction detail of the house as well as a spatial, social and symbolic feature. As the doorway frames the movement between the house and the surroundings, it mirrors and shapes the relationship between house and landscape, between household and society and between inhabitants and strangers. In the end, the doorway reflects and impacts on how people organize, relate to and think of themselves in the world.

A study of doorways in Viking Age longhouses in Southern Scandinavia has showed that during the Viking Age access to the longhouse was formalized. This can be interpreted as a response to the important role banquets and hospitality played in Viking Age society. From the study it is clear how the built environment, social life and the cultural ideals interacted and had great influence on the development of the longhouse during the Viking Age. The results of the case study will be presented and discussed in a wider context.

### **A07.11: Looking for theory – or how to apply concepts of architectural sociology on early medieval central places of 'Magna Moravia'**

by [Karin Reichenbach](#) (*Geisteswissenschaftliches Zentrum Geschichte und Kultur Ostmitteleuropas, Germany*)

While a discussion of the adaptability and benefits of theoretical concepts deriving from the Sociology of Architecture is well under way for archaeological research in general, it has yet to be introduced into the investigation of early medieval central places in East Central Europe. Using the complex topographies of well-known "Great Moravian" sites as examples the paper examines the value of this approach for analysing patterns of the spatial structures given there in relation to the social organisation.

As certain elements of these places' architecture and spatial configuration has been considered as adopted from Western-Carolingian or Eastern-Byzantine culture, a special focus is set on concepts explaining such phenomena of constructive similarities and the theoretical premises for transferring architectural ideas. Possible explanatory models polarise here from a rather 'diffusionist' perspective of one-sided cultural adoption to concepts linking products of architectural development to degrees of civilisation and social complexity and thus regarding them as independent and inescapable inventions. Between these poles a context differentiating approach taking further into account the reciprocity and interdependence of space and society needs to be found.

### **A07.12: Agency and the social use of space in late medieval Scandinavian castles**

by [Martin Hansson](#) (*Archaeology and Ancient History, Sweden*)

During the fifteenth century several large tower houses and castles were built by the Scandinavian high aristocracy. What unites these castles is the fact that their builders in several cases were related to each other, either by marriage or by lineage. One important purpose of the castles was to impress and to strengthen the builder's position and status

in society. It was important to ensure that everyone realized that this was a building for a person belonging to the highest strata of the aristocracy. Apart from the buildings themselves, also their landscape setting were used for the same purpose.

The aim of this paper is to focus and explore the role of agency and the social use of space in some of these castles. Why were the castles built in this way, what role did personal relations within the aristocracy play in this process and how did the spatial layout of the castle and its surroundings determine the spatial movements of people? Was the landscape organized in order to facilitate the aristocratic lifestyle that the high aristocracy desired? The castles were part of an intricate system of symbolism, but by whom were the symbols intended to be read and understood?

#### **A07.13: From busy town area to peripheral ground – A case study of changes in the built environment in a part of Medieval Copenhagen and what we can learn from them**

by Hanna Dahlström (Museum of Copenhagen, Denmark)

Recently revealed archaeological evidence shows that sometime during the early 13<sup>th</sup> century the use of the area which is present day Town Hall Square in central Copenhagen changes profoundly. It was a restructuring of space which would last for about 600 years, before the area changed character again. What could have occurred in the town in the early 13<sup>th</sup> century that would explain the new scenario?

This paper intends to explore the possible reasons or actions behind the change in the built environment which took place during this period. By comparing the use of space before and after this change, as well as putting it into the wider context of the town's topography, some questions will be addressed regarding how the development can be interpreted. What can we learn from the changes in the built environment about the way the town was organized and of the power structure? Can specific historical events be identified? Can we learn anything about what the changes in the built environment meant to the people of medieval Copenhagen? Can the mechanisms be relevant for present day town development? What can the archaeological source material tell us, and how can other disciplines aid?

#### **A07.14: Built environment and Cultural Change in Rural Spain: an archaeological approach to domesticity**

by David González Álvarez (Universidad Complutense de Madrid, Spain), Pablo Alonso González (University of Cambridge, UK)

This paper explores contemporary processes of cultural change in rural areas of Northern Spain through an archaeological study of domesticity in the case studies of Maragatería (León) and Somiedo (Asturias). Both territories share similar cultural and socioeconomic traits, comprising economic decline, severe depopulation and an increasing tendency to attract urban dwellers in search of second residences. Moreover, both areas were inhabited by two of the so-called 'damned peoples' of Spain: the *maragatos* and the *vaqueiros d'alzada*.

Drawing on a hybrid methodology that combines material culture and spatial analysis with ethnography, we examine the process of transition from preindustrial to postindustrial economies in these areas through physical, aesthetic and spatial transformations in the realm of house's façades and domesticity broadly. Clearly, domestic space constitutes a significant arena in the articulation, negotiation and challenging of human cosmologies, power relations and identities. Thus, houses can inform us about the role materiality plays in dynamic processes where cultural and social values are changing and being renegotiated. Ultimately, our paper makes a significant contribution to the understanding of cultural change and the relations between human communities and the built environment.

#### **A07.15: Re-visioning Interior Space: Boundaries and Thresholds in the Vernacular House**

by Catrina Mackie (University of Liverpool, UK)

This paper explores the construction of boundaries and thresholds as a means to examine the ways in which space is delineated and used within the house. While space syntax facilitates the examination of relationships between spaces, the form and permeability of the boundary or threshold between spaces is rarely considered, nor is the actual experience of moving from one space to another. This paper contends that by examining the ways in which boundaries and thresholds develop over time, it is possible to examine more closely the ways in which space within the house is re-conceptualized by its occupants and the consequences of this re-visioning for the working, domestic, and social lives of the inhabitants. Focusing on examples of vernacular housing from the Isle of Lewis, the most northerly of the Scottish Hebridean islands, this paper examines the types of boundaries and thresholds that existed within the house and their role in establishing, reinforcing and manipulating social relationships. As the houses in Lewis developed during the nineteenth and twentieth centuries, boundaries and thresholds lost or gained significance as they were moved, adapted, added and abandoned, reflecting changing notions of privacy, comfort, sanitation and personal status.

## POSTERS

### A07.01-P-1: Innovative research on Residential Architecture of Medieval Padua (ARMEP)

by **Alexandra Chavarria** (University of Padua, Italy), **Gian Pietro Brogiolo** (University of Padua, Italy), **Francesca Benetti** (University of Padua, Italy), **Vincenzo Valente** (University of Padua, Italy), **Federico Giacomello** (University of Padua, Italy)

The aim of the ARMEP project (*Architetture residenziali Medievali di Padova 2007–2015*) is an innovative multidisciplinary approach to the Medieval architectural heritage of Padua (Italy). Main result has consisted until now in the systematic census of residential architectures and their architectonic features (more than 250 buildings), their time-type investigation and the processing of time sequences pertaining to the residential constructions of the city and its territory the 11<sup>th</sup> and the 15<sup>th</sup> century. The data has been recorded and then managed through an integrated Geographic Informative System (GIS) that has permitted to analyse and visualize in a digital way a huge variety of historical evidence (archival sources, maps, archaeological evidence, ancient photographs, architecture). The data collected has been used not only to draw up a complete *corpus* of the surviving evidences of Medieval housing of Padova, but also to provide an overall reconstruction of the urban evolution of the city, as a reflection of the social and economical changes. The use of spatial technologies has permitted, to through new light on the characteristics an evolution of the medieval building standard lot as well as on the different uses of urban space using the concept of space syntax.

### A07.02-P-1: Landscape distribution of Talaiotic monuments as markers of social space

by **Maria Gelabert Oliver** (Christian-Albrechts-Universität, Germany), **Johannes Müller** (Christian-Albrechts-Universität, Germany)

The “tower-like” Talaiotic monuments of Mallorca and Menorca (Balearic Islands) are an emblematic and well dated architectural feature of these islands between ca. 900 and 550 BCE. These buildings represent nodal structures of the Talaiotic settlements, having important social and economic functions. Given their size and communal character, Talaiots represent communal values into which a considerable amount of work was invested.

A research programme is underway to study possible associations between the distribution of social activity, expressed as work invested in the construction of Talaiots, and different environmental variables. This research will allow defining the social space of the Talaiotic society.

Project implementation consists of:

- Creation of a database listing Talaiots and their location.
- Estimating work investment in the construction of Talaiots as a proxy for social activity.
- Territorial mapping of the distribution of social activity using a Geographical Information System (GIS).
- Statistical study to establish possible correlations between landscape elements and social activity.

The theoretical and methodological framework of the previously described study programme will be presented together with preliminary research results.

### A07.03-P-1: Domestic and funerary built environment in the Chalcolithic at the Lower Danube

by **Raluca Kogalniceanu** (Giurgiu County Museum, Romania)

During the Chalcolithic period at the Lower Danube, tell settlements were one of the means by which the communities managed the landscape and changed it according to their own needs. Less visible in the landscape were the cemeteries where these communities buried their deceased. Nonetheless, a relation of dependency was created between the landscape of the living and that of the dead. As a whole, these pairs represent a form of built environment incorporating most probably economic, topographic and ideological aspects. We will focus mainly on the built funerary environment.

The location of the cemeteries was subjected to several preferences, some stronger than other. They were within visible range from the settlement, at a distance mostly less than 400 m. The sunny side of slopes seems to have been preferred. In quite a number of cases, some natural or artificial barrier (water, ravine, and ditch) was recorded between the inhabited area and the area dedicated to the burials. The direction for the placement of the cemetery was mostly towards sunset (with some variations). Zonal tendencies (North versus South of Danube) could be observed in the distance between settlement and cemetery and cardinal direction for the location of the burial ground.

**A07.04-P-1: Space use patterns around LBK house.**

by Katarzyna Michalak (University of Gdańsk, Poland), Łukasz Polczyński (University of Gdańsk, Poland)

In this paper we present the results of the researches on the spatial distribution of artifacts around LBK houses from Malopolska (southern Poland) settlement.

Spatial distribution of ceramic, flints, stones and archaeobotanical remains, variable intensity and destruction level of artifacts are important premise to discuss the patterns of space use and deposition of waste. We assume that most of the artifacts are waste from the houses where they were found. In that case determine of "dirty" and "clean" space may indicate the special zones of activity.

We focus on differences in spatial distribution of ceramic and non-ceramic remains around individual houses and repeatability of the activity zones localization in the settlement context.

**A07.05-P-1: Focusing on the Apennine Landscape of the Province of Parma (Italy) during the Bronze Age: the Higuchi viewshed analysis approach**

by Cristiano Putzolu (Università degli Studi di Padova, Italy)

An interesting methodological approach to viewshed analysis is the Higuchi viewshed introduced in archaeological practice by Whitley and Gillings: dividing the view from a site in 3 concentric components with different perception of the landscape, it is possible to divide the sites according to the power of control on a particular range of the landscape (foreground, middle-ground and background). This approach was chosen for the study of the Bronze Age in a mountain transect of the Province of Parma. The size of each visual control range was calculated using the hypothetical height of a hut as base unit instead of the height of the most common tree in the area as Higuchi suggested. The viewshed of each site was divided according to the calculated buffers and an area value was recorded for each visual range. The values of visibility in the foreground, middle-ground and background for all the sites were collected in 3 tables and divided into high, middle and low values of visual control, ending with 3 values of visual control in the different visual ranges for each site. Grouping the sites according to the combination of these 3 values allowed recognizing similar settlement choices between apparently different sites.

## Session A08

### Chains of Citation: re-contextualization in the Viking Age

**Saturday, 7 September 2013, 14:00–16:00**

**Room:** EU 106 (Building 1, ground floor)

**Organisers:** **Nanouschka M. Burström** (Stockholm University, Sweden) and **Howard Williams** (University of Chester, UK)

Re-contextualization and incorporation of objects and monuments into new associations is a well-known phenomenon from different periods in prehistory and history. During the Viking Age in Northern Europe it became ever more frequent, and seems to find new expressions. The returning to, and reuse of, monuments and graves is one prominent focus of Viking Age interest and a forum for human reconnection with the 'past in the past'. Also the use of objects in new contexts, and for new purposes, is common and includes visible traces of re-use, modification and additions which tell of changed uses and changed meaning contents. On another level paraphrasing, often perceived of as imitation of objects, patterns or shapes, seems to be part of the re-contextualization practices of the time. Re-contextualization could accordingly be considered as networks or chains of citation by which not only humans but also different materialities, scales, forms and decorations refer to each other.

Re-use of monuments, retrieval of objects, inclusion of early material in later contexts, and transfer of meaning as visible through all of these as well as through imitation, are archaeological entries into understanding the wider meanings of this practice.

Re-contextualization in the Viking period was not an isolated phenomenon but related to earlier practices as well as to contemporary ones. Still, it seems to be a fundamental component, almost an obsession, of Viking-Age culture which makes the period an important and potentially rewarding focal point for understanding the phenomenon.

The session will explore the theme out from three aspects: physical re-contextualization; physical alterations; and conceptual re-contextualization.

#### **A08.01: Revealing sequences of re-contextualization: the use of coins as pendants**

by *Florent Audy* (Stockholm University, Sweden)

In Viking-age hoards from Scandinavia it is common to observe, among the coins deposited, one or several specimens provided with a hole or a loop. The presence of these suspensions indicates that coins were not only used as means of payment, but also worn as pendants and jewellery.

Coin-pendants are the product of a major transformation in which a monetary object is turned into an ornament. Despite its importance, the re-contextualization associated with this transformation is not the only one that needs to be considered in order to understand the coins used as pendants in the Viking Age. From its importation to its deposition, it is possible to distinguish a sequence of stages in the life of the coin, each corresponding to a specific transformation.

The aim of my presentation is to show the importance of putting the re-contextualizations in a sequence of events if we want to explain the mutability of valuables in Viking-age Scandinavia. My paper also aims to show the importance of considering the entire life of the object in order to understand its changing functions and meanings at each successive stage.

#### **A08.02: Matters of life and death: board games, burials and berserkers**

by *Mark Hall* (Perth Museum & Art Gallery, UK)

This contribution will seek to explore some chains of citation in the Viking Age, deployed by the Vikings and by those they interacted with, principally in the context of Scotland. In seeking to get to grips with the confirming and transforming networks of connections I will call upon some key pieces of reused early medieval material culture and prehistoric monuments – including the Monifieth plaque, the Hunterston brooch and the Maeshowe tomb – to testify to their performative qualities in being adapted to signal changes in identity and asserting new ownership. The second half of the paper will broaden the question of performance and networks across the whole Scandinavian world with an examination of the particular role of board games and their symbolic values.

### **A08.03: Imitation as citation: coin imitation as rhetoric and discourse**

by *Nanouschka Myrberg Burström* (Stockholm University, Sweden)

Coinage began to be used from around AD 995 in Scandinavia. These early coins imitated contemporary Anglo-Saxon coins but not in a passive or unquestioning way, but as part of complex chain of citations by which imported artefacts were adapted and re-contextualized. For more than thirty years the English and Scandinavian coinages were closely connected through a network of humans and objects that moved, physically and conceptually, between mints and kingdoms. Different iconographical models were used in a strategic/rhetorical way by commissioners and artisans to create relations between cognitive nodes through association, referencing, paraphrasing and appropriation. When circulating, the coins linked users to an official and shared discourse, and maintained the created relations through the impact of their materiality. While many re-contextualizing practices in the Viking Age seem to deal with reconnection with the past, the coin-imitation practice apparently worked mainly within a contemporary conceptual framework, although there are components of 'ancientness' as well. Object agency and the hybrid, creative, characters of these coins provide starting points for a deeper understanding of the coins' wider connotations and meanings, as well as for the imitative practice itself.

### **A08.04: Citations in stone**

by *Howard Williams* (University of Chester, UK)

The Viking Age in the British Isles and Scandinavia saw new appropriations, reuses and adaptations of existing material forms and monuments that allowed individuals and communities to negotiate and assert their social identities and social memories. In the 'post-colonial' context involving Norse raiding, trading, invasion and diaspora, pre-existing traditions in stone sculpture were transformed and proliferated within a meshwork of circulating people and things. Previous research has demonstrated that inscribed and sculpted memorial stones of this period continued to reflect the close association and interplay between 'the arts' including wood, leather, bone, textiles as well as metalwork and manuscripts. I contend that we can see this relationship in a new light as an active strategy of commemoration involving citations in stone to a range of other materials, scales and spaces familiar to contemporary audiences. These transformations held mnemonic efficacy because they connecting stones to a mesh of architectures, arts and material cultures that constituted elite identities in life and death. I explore two case studies -tenth-century hogback stones from northern Britain and tenth- to eleventh-century rune-stones from southern Scandinavia. Together they demonstrate the persistent commemorative significance of skeuomorphic, scalar and spatial transformations in the study of the architectures and portable artefacts. These became powerful ways of honouring and constituting the identities of the dead among the living.

### **A08.05: Meaning and belonging in new landscapes: building context from scratch in the Viking-age North Atlantic**

by *Orri Vésteinnsson* (University of Iceland, Iceland)

Faced with landscapes never before inhabited by humans, the Viking Age colonists of the North Atlantic islands had not only to sort out how to secure their physical survival but also to actively substitute for the meaning and context which were an integral part of the long lived-in landscapes of their homelands. Such contextualization had practical ends but it is arguable that the psychological and social requirements of belonging were of equal or greater importance. Belonging can be seen as a sense of entitlement but it is also an important quality of life and it underpins community and the social and political structures that it supports. Evidence for landscape contextualization can be found in place names and the theomorphing and anthropomorphing of natural features (e.g. hills perceived as grave mounds) but as a rule such evidence is late and cannot be related directly to the colonisation period. This paper will review archaeological evidence from Viking Age Iceland which suggests active efforts to build monuments, e.g. at assembly sites and in cemeteries, to substitute for features with deeper history in the homelands. Such behaviour allows reflections about the function of the past in the present of the Viking Age.

## Session A09

### Children in the Prehistorical and Historical Societies

Friday, 6 September 2013, 08:30–18:30

Room: EP 130 (Building 1, ground floor)

**Organisers:** **Marta Chmiel** (University of Szczecin, Poland), **Katarzyna Orzyłowska** (University of Szczecin, Poland), **Paulina Romanowicz** (University of Szczecin, Poland), **Bartosz Karolak** (University of Szczecin, Poland) and **Aija Vilka** (University of Latvia, Latvia)

Children were present in each past society even if their presence is so poorly visible in the archaeological record. The aim of this session is to bring together ideas and information to develop an European overview of childhood and the role of a child in prehistorical and historical societies. We would like to compare and confront various methods and theories for looking for children in the past. Our intention is to focus on the issue of how adults perceived children in different times and what was their influence on the lives of the youngest participants of each society. We are interested especially in the material manifestation of the presence of children as well as in the functioning of children in the space around them.

We would like to invite researchers specialised on different periods and from various archaeological subdisciplines.

#### **A09.01: Where have all the Children gone?**

by **Lene Høst-Madsen** (*Museum of Copenhagen, Denmark*)

The idea of focusing on a specific social theme like childhood is a way of up qualifying the archaeological record towards a social understanding; it gives a possibility to angle the interpretations of the past material culture differently. What defines childhood? And is childhood a modern western construction based on today's norms? Did childhood exist in pre industrial societies? How can this be detected in the material culture?

Traditionally children have been seen as small adults. This paper concerns the Copenhagen material culture from the medieval and the post medieval periods that has been unearthed during the last ten years of development lead excavations. The material is varied and rich and possesses a lot of information regarding life in the city. But how and where can we see the children in this material?

The paper will focus on the differences between adults and children in the archaeological record rather than similarities in the medieval and post medieval period. It will also focus on the position of children in the medieval and post medieval urban society; where they were educated, where they played, and how they were treated when they died.

#### **A09.02: Newborn Burials in Medieval and Post-medieval Bohemia: Archaeological Contribution to the Perception of Children in Historical Society.**

by **Martin Čechura** (*The Museum of West Bohemia, Czech Republic*)

The social topography of medieval and post-medieval cemeteries represents a potentially powerful tool for the analysis of medieval society and the knowledge of spiritual culture segment, which represents the perception of death and dealing with a dead body. The paper aims to explore the location and the accumulation of newborn graves in medieval burial grounds and try to analyze the reasons that led to such behavior. Comparison with the written sources suggest a wide range of possibilities for interpretation and the resulting difficulties in classifying this archaeological phenomenon.

#### **A09.03: Burials of Children in Medieval Necropolises in Macedonia**

by **Lidija Blazhevska** (*NU Museum of Macedonia, The former Yugoslav Republic of Macedonia*)

This paper summarises the results of archaeological excavations of medieval necropolises in Macedonia in the Povardarie area (Krstevite, Bistrenci, Pepelište) conducted in the last 20 years, compared with the anthropological analysis of Fanica Veljanovska, PhD. The archaeological excavations in 1950, carried out by the Archaeological Museum in Skopje and run by the academic Blaga Aleksova, discovered necropolis from the Pre-Roman period, Roman times, Early Christianity (V–VI century) and Medieval period (IX–XV century) in the area of Prosek, one of the most prominent fortified towns on the territory of R. Macedonia in the Middle Ages. Skeletal series from the sites Crkvište and Manastir have remained among the largest medieval series so far. Relatively well-preserved finds allow definition of the paleodemographic, anthropo-morphological and paleo-pathological features of this significant medieval population. A considerable part of skeleton groups belongs to children and adolescents. The children to adults ratio is 25:75. In this

skeletal series, remains of several babies have been discovered together with women's skeletons. The survey of the burial rites shows that the Christian burial was still in a process of formation. Leaving food, pottery, coals, articles of adornment etc., is evidence of the pagan anachronisms, still preserved in children's burials.

#### **A09.04: Child burials and children's status in early medieval Poland**

by Darek Blaszczyk (*Museum of the First Piasts at Lednica, Poland*)

Since the adoption of Christianity in the second half of the 10<sup>th</sup> century A.D. on the Polish territories situated in the basins of the Oder and Vistula rivers appears a horizon of so called row-grave cemeteries. They are characterized by an inhumation burial rite, placing of burials in the East – West axis and provisioning of grave goods. Besides of burials of adult men and women these cemeteries contain a considerable number of child burials.

Taking archaeological evidence from row-grave cemeteries (e.g. grave goods, grave constructions, the arrangement of the body, position of graves within a cemetery, and so on) supplemented by some textual information, the paper will examine the attitude to children and their place in early medieval society. The approach will be to explore the connection between biology and culture and to identify thresholds which are bracketing stages in the lifecycle.

#### **A09.05: Short grave pits as child burials' indicator? Case studies from Middle and Late Iron Age in the territory of Latvia.**

by Aija Vilka (*University of Latvia, Latvia*)

In the Latvian archaeology small burials (short grave pits) are often used as an uncritical indicator for child burials, especially in cases when other significant features (anthropological material, mortuary treatment) aren't preserved. But can they be treated as an unequivocal indicator or are there situations when children were buried in burials larger than their stature? In this paper case studies from the Middle and Late Iron Age in the territory of Latvia are analysed, showing that grave pits in child burials sometimes could be as long as in adult ones and therefore using them as a clear indicator to determine the deceased's age could create a false impression. Shortly it can be said that: small burial (short grave pit) = child, but child ≠ small burial (short grave pit). So, when clearly marked small burial with uncharacteristic grave goods (beads, clothes' ornaments) is established one could declare that this is child burial, on the other hand if it is a big burial (large grave pit) where similar mortuary treatment is found it can't be unequivocally declared that this is an adult burial.

#### **A09.06: Sons of athelings given to the earth: infant mortality within Anglo-Saxon mortuary geography**

by Duncan Sayer (*University of Central Lancashire, UK*)

For twenty or more years early Anglo-Saxon archaeologists have believed children are underrepresented in the cemetery evidence. They conclude that excavation misses small bones, that previous attitudes to reporting overlook little people, or that infants and children were buried elsewhere. However, we must be careful of oversimplifying composite social and cultural responses to childhood and infant mortality. It is statistically demonstrable that more infants were placed in large cemeteries, and within particular areas or zones within them. Early medieval burial places were not isolated sites but were part of regional mortuary geographies and provided places to stage events that promoted social cohesion across kinship systems extending over tribal territories. Focusing on a national sample and specific case studies, like the on-going exactions at Oakington, this paper will argue that patterns in early Anglo-Saxon infant burial were the result of fashions in female mobility. For an expectant mother the safest place to have children was with experienced women in her maternal home; endogamous marriage meant elite daughters were sent away so some communities, important to tribal identities, probably became places for the birthing and burring of the sons and daughter of a tribal aristocracy.

#### **A09.07: From the little girl to the young woman. Reconstructions of periods of life of female subadult individuals based on archaeological finds from Merovingian graves of the Munich Gravel Plain**

by Doris Gutmiedl-Schuemann (*Universitaet Bonn, Germany*)

In the archaeological field the main sources of the continental Merovingian Period are cemeteries and graves. These graves are often richly furnished with non-organic parts of the cloth, weapons and jewellery, tools and other objects. Furthermore the respective grave goods show a close connection to the buried person.



Anthropological analysis of skeletal remains from graves of children and adolescent allow the grouping of them into different age groups. A close examination of graves and grave goods from infant and juvenile female individuals buried in cemeteries of the Munich Gravel Plain shows various interesting aspects: Grave goods that were given to children were on principle out of the same kinds of objects that were given to adult deceased, only the number of grave goods on the one hand and the number of categories of grave goods on the other hand increases the older the death girl became. For example, tools are regularly missing in the graves of little children (age group infants I), but are often found in graves of older girls (age group infants II). This matches the contemporary written sources, where information can be found that children from the age of 7 start to take part in adult work.

#### **A09.08: Children in Byzantium: written sources and archaeological findings**

by **Alexandra Karagianni** (Aristotle University of Thessaloniki, Greece)

The aim of this paper is the study of the life and role of children in Byzantine society (330-1453 A.D.) as shown in Byzantine literature and findings of archaeological excavations. Information about children derives from the writings of the Church Fathers who provide admonitions to parents for the upbringing of their children, the hagiographical texts that describe the childhood of saints, the miniatures of manuscripts, the frescoes in Byzantine churches and the notebooks, toys, amulets and clothes that have been found.

The discrimination between the two sexes in Byzantium is evident by the fact that the birth of a boy is rejoiced whereas the arrival of a girl passes unnoticed. The Byzantine educational system intends to make children good Christians on the contrary to the ancient Greek system that provides mainly knowledge.

Children in Byzantium primarily ensure the lineage continuity of their families and at the same time they project the socio-economic status of their parents through the clothing they have and the education they receive. They also function as assets to their families as they are used in the alliance strategies of the elites, on the farms of the peasantry and in the workshops of the urban artisans.

#### **A09.09: Biological indicators of subadult stress in the Late Antique population of Cibalae**

by **Vlasta Vyrubal** (Croatian Academy of Sciences and Arts, Croatia)

The purpose of this study was to get a better insight on life-conditions in Late Antiquity. In order to do so, skeletal sample from the Late Antique Cibalae was anthropologically analysed to determine subadult mortality rate, average life span for males and females, and the presence and frequency of indicators of subadult stress. Pathologies indicative of subadult stress include: the presence of *cribra orbitalia*, linear enamel hypoplasia, and non-specific infectious disease (*periostitis*). Indicators of subadult stress proved to be very useful when trying to assess health and life quality of an archaeological population. The results were then compared to the previously studied skeletal series from Certissia. By doing so we got information on different living conditions in a Late Antique village and city. Both sites are dated to the same period and are geographically close to one another, the only difference being in the nature of the settlements. Certissia is a rural settlement, while Cibalae is an urban centre. Since both sites belong to the same geographical region and chronological period, little difference is expected between biological characteristics of the two populations. Possible differences might be the result of different life-styles of the rural and urban populations.

#### **A09.10: Stillborns, Newborns and Infants: Differential Funerary Practices in Neolithic Kovačevo (Bulgaria)**

by **Pascal Sellier** (CNRS, UMR 7041 ArScAn, France)

The large settlement compound of Kovačevo (Struma Valley, Blagoevgrad, Bulgaria), dated from the early Neolithic (around 6<sup>th</sup> millenium BC) has now been thoroughly excavated (more than 1.600 m<sup>2</sup> with four building phases). Only seven burials have been discovered on the whole site, mainly near or under the walls of the houses. All these individuals are non-adults and even very young immatures. The bioarchaeological study has been able to assess the age of those buried subjects: five are concerned by perinatal or infantile mortality (some are stillborn or newborn) and two are much older (around 6 and 7 year-of-age).

The archaeo-anthropological analysis of the burials, including the condition of the deposits and the primary position of the subjects, shows that, even for such young individuals, there are different funerary practices which can be related to age groups and probably to the status of the non-adults according to their age and to their role in this Neolithic society.

#### **A09.11: Invisible Children on Wielbark Culture Cemeteries**

by **Marta Chmiel** (*University of Szczecin, Poland*)

Age and sex have – except in the biological dimension – differed in their symbolic and ideological meanings at various stages of life. Because of that, the forms and ways of creating rules, through which other categories are constructed, should be considered.

The main issue of the following paper will be children in perinatal age and their role in Wielbark Culture. Evidence from big burial sites of Wielbark Culture indicate an unexpectedly low number of graves of this age category. It is impossible that the death rate was so low. Therefore it seems to be important to answer: what happens with infants after their death, and then, what was their significance in the society?

#### **A09.12: Child Remains in the Roman Period Settlements of the Great Hungarian Plain**

by **Kornel Sóskuti** (*Hungarian National Museum, Hungary*)

Sarmatian tribes inhabited the Great Hungarian Plain in the period between 1<sup>st</sup> and 5<sup>th</sup> centuries AD. The intensive level of their population resulted in a dense settlement network. Several details were revealed in the past decades during rescue excavations performed on extensive areas.

Features in which a particular group of human remains, the so-called pit corpse. Human remains recovered in such circumstances can be classified into more groups, and their occurrences are explained by several theories. Some consider that the remains belong to people killed during hostile attacks, whereas others support the idea of ritual sacrifices.

Child skeletons can be interpreted as a subgroup of human pit corpse discovered in settlements. In most cases, regularly buried children can be found in numerous settlements. The aim of this present lecture is to introduce and present interpretations on some of the abovementioned burials recovered in the past years. It also attempts to define the social status and communal role of the children by introducing and analysing all available relevant information, as well as by the occurrence of child burials disinterred in excavated cemeteries.

#### **A09.13: The significance of a child's death – A socio-archaeological approach to children's graves in the Latène Period in Switzerland**

by **Ursina Zweifel** (*University of Zurich, Switzerland*)

The amount of archaeological research concerning children and children's graves in Switzerland has increased since 1990. While interesting papers have been published about children in the Bronze Age, the Roman period (especially concerning neonates) and the early Middle Ages, there is still not a single published paper about children and children's graves in the Iron Age. But newly discovered cemeteries from the Latène Period with a notable number of children's graves in Canton Bern (CH) have increased the necessity for research in this area.

It's the aim of this paper to take a closer look on children's burials in the Latène Period and what a death of a child meant not only for the child's family, but also for the immediate society. Therefore adult's and children's graves in some important Swiss Latène cemeteries are examined using cluster analysis as well as more qualitative and spatial approaches. Due to poor anthropological data for most of the cemeteries the paper focuses on the grave goods and their array in the grave. The differences and similarities of children's and adult's graves within the same cemeteries obtained this way form the basis for a socio-archaeological interpretation.

#### **A09.14: Perception of Children in Southern Etruria in Early Iron Age**

by **Katarína Hladíková** (*Faculty of Philosophy, Comenius University, Slovak Republic*)

The research of children's graves in order to (re)construct their role and place in prehistoric societies is restricted by many factors and often overlooked not only by the archaeologists. This paper presents synthesis of the research aimed at perception of children in the Early Iron Age in Southern Etruria, Italy. The results are based on analyses of burial rite and grave goods from cemeteries Quattro Fontanili (Veii), Sorbo (Cerveteri) and Tarquinia. Children's graves show some differences in the burial rite and in the grave goods compared to the graves of adult (other) individuals. The results of the analyses allowed us partially to (re)construct the social status, gender roles and the phases of children's transition to different life's stages that reflect the perception by adults.

#### **A09.15: Children-warriors? Children's burials with weaponry during the Ural Bronze Age**

by **Natalia Berseneva** (*Institute of History and Archaeology, Russian Federation*)

This study concerns the burials of the Sintashta cultural groups. The sites of the Sintashta culture are currently dated from the 20<sup>th</sup> to the 18<sup>th</sup> centuries BC. The settlements and cemeteries of the Sintashta type are concentrated in the northern steppe of the South Urals. The cemeteries are represented by burial mounds of up to ten barrows. The deceased were placed on the left (rarely on the right) side in a flexed position with hands near the face. Burial architecture was quite complex.

One of the most impressive traits of the Sintashta burial grounds is that the sub-adults constitute on average 60% of the buried. Some of them were buried with the weaponry and they looked quite intriguing. Children's graves with weaponry are extremely rare in the steppe cultures of the Bronze Age in Eurasia, they are rather unique and worth special attention.

The main purpose of this paper is to try to interpret such burials basing on the analysis of their grave goods and anthropological date.

#### **A09.16: Children and their social identity in the Bell Beaker Culture, Bavaria**

by **Stefan Biermeier** (*SingulArch, Germany*), **Jongil Kim** (*Seoul National University, Republic of Korea*)

This paper aims to explore a way of formation of identity and age categorisation in the Bell Beaker Culture in Bavaria with the integration of various theoretical perspectives (including phenomenological perspective and categorisation) and the data and information drawn from the recent excavation of a Bell Beaker burial group, Garching near Muenchen, in which approximately 10 children's burials (of a total 11 burials) have been found with bell beaker.

It will be argued that first of all, the existing perspectives on bell beaker burials (in particular the East group of the Bell Beaker Culture) will be critically reviewed. And then, based upon the result of excavation of a Bell Beaker burial group (Garching), the similarities and differences between this burial group and others already discussed elsewhere will be argued. It will be also explored to better understand how children would be categorized and their social and symbolic identity was formed in mortuary practice in this period. .

#### **A09.17: Funerary and social treatment of children in a late Neolithic collective grave. Evidence from "La Truie pendue" (Passy-Véron, Yonne, France)**

by **Melie Le Roy** (*Universite Bordeaux 1, France*), **Sandrine Thiol** (*INRAP, France*), **Clement Coutelier** (*Universite Bordeaux 3, France*), **Camille De Becdelievre** (*Universite de Belgrade, Serbia*), **Anne-Marie Tillier** (*CNRS, France*), **Stephane Rottier** (*Universite Bordeaux 1, France*)

The late Neolithic in France (3600-2100 BC) is characterized by the prevalence of a specific mortuary practice; the collective grave. Archaeologists usually interpret this funerary practice as accessibility to the grave for the entire population. But is it really the case?

To test the relationship between this funerary behavior and population sampling, special attention was paid to the "La Truie Pendue Passy-Véron" settlement (Yonne) in the Paris basin. The site is a collective grave dated from 3360 to 3098 BC which contained 65 deceased. Our study intends to examine the place of the non-adult individuals within the community during the late Neolithic. Biological studies were carried out in order to characterize the population of "La Truie Pendue" and to undertake demographical reconstruction; in addition, analyses of burial practices and spatial distribution of the skeletal remains were conducted. Within the sample, 30 non-adult individuals were buried inside the collective grave, representing almost half of the population.

Our results were compared to the data collected from other collective graves in the Paris basin to evaluate the uniqueness of the Passy-Véron settlement, and/or to provide archaeological evidence of a tendency within the late Neolithic communities.

#### **A09.18: Children in the Paris basin collective burials at the end of the IVth millennium BC**

by **Arnaud Blin** (*UMR 7041 – ArScAn – Ethnologie préhistorique, France*), **Anne-Sophie Marçais** (*Université Nanterre Paris Ouest La Défense, France*)

Within a century and a half, around 450 collective burials have been discovered in the Paris basin. The archeological material and the radiocarbon dates indicate that 90 % of them were in use during the second phase of the late Neo-

lithic, currently estimated as 3350-3000 BC. However, a considerable heterogeneity of these monuments has been recorded. There are two main architectural types: the hypogeum, or artificial cave, and the gallery grave defined by a stereotyped plan and variable raw materials.

The re-examination of the bone assemblages of the best preserved sites, like the gallery grave of La Chaussée-Tirancourt, has highlighted different functioning principles between the architectural types, especially the mortuary practices on children. They both shared exclusion of very young infants and of a part of the age class [1-4] years old. But, for age [5-9] and [10-14] years old, specific burial areas have been reserved in the gallery graves, without differential treatment. On the contrary, in the hypogea, children were always buried along the same side as men, opposed to women. Moreover, secondary burials and presence/absence of ornaments permitted to differentiate children between them. At last, these differences fall within two funerary systems used by two populations sociologically different.

#### **A09.19: In search of Neanderthals kids activities. Challenge of describing childhood in the Stone Age.**

by **Katarzyna Orzyłowska** (Szczecin University Institute of History, Poland)

Researchers made the discovery that Neanderthal kids aged faster than humans. A new study of the fossilized teeth of Neanderthal children finds that their permanent teeth grew significantly faster and erupted earlier than those of our own species (Smith, T. M. et al. 2010). However still the question remains unanswered what this accelerated childhood and growing up would have looked like?

This paper will attempt to consider this problem and to answer the following questions: what was the childhood of children of the Stone Age, what were prehistoric children doing and how archaeologist could recognize its activities, and finally if the marks of Stone Age children behavior are likely to be an important determinant of archaeological variability?

Smith, T. M., Tafforeau, P., Reid, D. J., Pouech, J., Lazzari, V., Zermeno, J. P., Guatelli-Steinberg, D., Olejniczak, A. J., Hoffman, A., and Radovan, J., Masrour, M., Toussaint, M., Stringer, C., Hublin, J. J. (2010) Dental evidence for ontogenetic differences between modern humans and Neanderthals, PNAS November 15, 2010

#### **A09.20: 500 000 year old children. Underlining the presence of acheulean apprentice stone knappers at the Boxgrove site, England.**

by **Mathieu Leroyer** (CNRS, France)

In human societies, becoming an adult not only means to reach a physiological maturity and to develop the capacity to self-sustain. It also implies for any new generation to learn the cultural norms and to develop the skills implicitly increased by any technological development. This paper tends to demonstrate that such a process of learning, deep rooted in the childhood, were already well developed in pre-modern humans (*homo heidelbergensis*) that first colonized Northern Europe 500 000 years ago. At the Boxgrove site, England, these hominids left thousands of stone knapping remains related to biface fabrication in a fine grained sediment. Our technical analysis of these remains particularly show that biface knapping is hard to master and that qualitative disparities within the corpus reflect different levels of skill, from expert to novice knappers. We show that the more parsimonious explanation is that the worst products belong to children. In some way spatial repartition of these remains could confirm some expectations about the intervention of children within hunter gatherer activities. These results allow us to restore an archaeological visibility to some discrete but important members of prehistoric societies, in a palaeothological way.

### **POSTERS**

#### **A09.01-P-1: Hide and Seek – Where do Medieval Children Hide?**

by **Povilas Blaževičius** (National Museum – Palace of the Grand Dukes of Lithuania, Lithuania), **Šarūnas Jatautis** (Vilnius University, Lithuania), **Rytis Jonaitis** (Klaipėda University, Lithuania)

No doubt, Medieval castles and towns were full of children. However, how can one decrypt the information in tangible cultural remains and find them?

Archaeological data is one of the main sources of information for this purpose. They provide valuable although fragmented facts about the participation of children in urban life. Children's trace can be found in old toys, small objects and burial sites.

The aim of this presentation is to present the findings of a study of children's footwear found in urban environment. Data based on anatomical parameters of a foot is collated with anthropological data from urban burial sites. This correlation of the data from urban and burial sites is used to reconstruct the social status of children, their number and place in Vilnius city society in the 13th-15th centuries.

#### **A09.02-P-1: The space of children in Northern Italy Prehistoric cemeteries**

by Claudio Cavazzuti (*Museo Nazionale Preistorico Etnografico L. Pigorini, Italy*), Loretana Salvadei (*Museo Nazionale Preistorico Etnografico L. Pigorini, Italy*)

During the 3rd millennium BC many transformations take place in the ideological system and in the social structures of the European Bronze Age communities. In Northern Italy, one of the most remarkable changes is the introduction of cremation, which can be dated at the Middle-Late Bronze Age, representing a strong break with the tradition of inhumation.

In this cultural frame the mortuary treatment of children, especially the perinatal infants, radically changes in terms of their presence/absence in cemeteries or in delimited groups of burials, and in the spatial relationship with adults. While infants, even in neonatal and fetal age, are present among Early Bronze Age and Middle Bronze Age inhumations, they totally disappear from Middle-Late Bronze Age cremations, and then reappear in the proto-urban cemeteries of Final Bronze Age.

A sample size of more than 300 burials of children has been recovered and analyzed by the authors in order to reconstruct demographic structures, familiar unit models, and social organization. This presentation aims to show the chronological evolution of ritual behaviours towards children from Early Bronze Age to Final Bronze Age in Northern Italy.

#### **A09.03-P-1: Eggshells in a juvenile burial from Avar cemetery in Croatia**

by Zrinka Premuzic (*Institute for Anthropological Research, Croatia*), Petra Rajic Sikanjic (*Institute for Anthropological Research, Croatia*), Anita Rapan Papesa (*Vinkovci City Museum, Croatia*)

Skeletal remains of three individuals were found in Grave 44 at the Avar cemetery in Nuštar, Eastern Croatia. The cemetery with 196 burials is dated to the end of the 8th and 9th century. Bioarchaeological analysis revealed that skeletal remains from grave 44 belong to juveniles, two of them under five years of age and one foetus. Grave findings included bronze rings, circlets, pottery vessel, glass beads and fragments of eggshell. These fragments are the only ones found at the entire cemetery. Eggshells are commonly found among grave goods in many cultures and different time periods as eggs are considered to be symbols of fertility and/or rebirth.

#### **A09.04-P-1: The story of one toy**

by Paulina Romanowicz (*University of Szczecin, Poland*)

Found in Gdańsk during the excavations of the modern latrine object became a puzzle. It looks so simple and works easily but is this a toy? The wind-moved toys were quite popular in mediaeval and modern ages. Known from ancient times, they have their specific shapes and ways of working – moved by blowing wind or a puff. This paper will be about such type of toy from the XVIIth century Gdańsk in the context of the tradition of wind-moved toys in Europe and its meaning in children's plays.

#### **A09.05-P-1: Early modern finds from the orphanage in Altenburg**

by Kathrin Schäfer (*Otto-Friedrich-Universität, Germany*)

My PhD project researches the 17<sup>th</sup> and 18<sup>th</sup> century orphanage in Altenburg. The orphanage was founded in 1670 in grounds of the former church of Augustinian Canons and existed until 1805.

From September 2006 until 2010 archaeological excavations were carried out in the area of the church and cloister. The main aim of the investigation was to reconstruct the medieval monastery. However, traces and relics of the centuries after the dissolution of the monastery in 1543 were also discovered and documented. The time of the orphanage especially is represented in the finds. These finds allow a vivid insight into the everyday life of an orphanage and its inhabitants in early modern times. The material mostly comprises ceramics but also glass, iron, nonferrous metal, bone, minerals and textiles.

In addition to the presentation and analysis of the small finds the building of the orphanage and the written sources will be appraised. Once completed, this interdisciplinary work will be the first monograph in Germany that deals with an orphanage in the early modern period archaeologically, historically and architecturally.

The archive work still lies ahead. Yet the finds speak for themselves.

#### **A09.06-P-1: Bell Beaker child burials and their gender identity in the light of DNA analysis**

by **Jan Turek** (*University of Hradec Králové, Czech Republic*)

The DNA analysis of 53 child burials from the Bell Beaker cemetery at Hoštice-I produced data on 21 sexed individuals. Out of 14 burials with male gender attributes were 12 individuals biologically male and two determinate as women. Cases of girls that were brought up as boys probably existed in 3rd Millennium BC burial customs. Out of seven children buried in the female position only 1 was actually biological female (juvenile 15–20 years) and 6 male (2 juvenile 15–19/20 years). That means four boys (aged 3–4, 7, 8–12, 15) were in fact buried as women. Such a result is in line with known demographic unbalance within Beaker cemeteries. Most young girls were not buried at the communal cemetery and considerable number of boys were buried in the female fashion. This is rather high number of cases when the masculine attributes were downplayed in the burial customs and it is hard to interpret whether they were boys supposed to be brought up as women or they had yet no right to act as men, unlike some other sub-adult boys, perhaps members of families with ascribed hereditary warrior status. It almost seems that some young boys were socially considered to be girls, perhaps until ceremonial rite of passage, social initiation of some kind.

#### **A09.07-P-1: Eneolithic children graves in Romania**

by **Mădălina Voicu** (*National History Museum of Romania, Romania*), **Cătălin Lazăr** (*National History Museum of Romania, Romania*)

This paper focuses on the Eneolithic intra-muros and within cemetery children graves, on the actual territory of Romania. These burial practices may implicitly reflect, through grave goods or features, such as body treatment and position, the potential symbolic significance of children and their connection to the household. Each of these characteristics is a possible active representation of special treatment applied to infants and children and could be carefully understood as a message regarding not so much the individual but the family or community, as the deceased children show an “artificial” identity, created by the adults. We discuss the graves from the viewpoint of their potential symbolism and their position within the society when buried within the settlement and associated with a house. Regarding the graves found within a funerary area we will argue the possible causes of paucity in grave goods and their significance when these exist. Another issue targeted is the differentiation between adults and subadults, as the death impact of both categories on the community is reflected within the funerary ritual.

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## Session A10

### Cold War in Context: Excavating the Contemporary World

Thursday, 5 September 2013, 14:00–18:30

Room: UP 104 (Building 2, ground floor)

**Organisers:** Wayne Cocroft (English Heritage, UK), John Schofield (University of York, UK) and Mats Burström (Stockholm University, Sweden)

It is nearly twenty years since heritage agencies and other organisations began recording monuments of the Cold War, primarily in the UK and the US but extending swiftly to other countries on both sides of the former Iron Curtain. The novelty of this recent military archaeology quickly inspired other archaeologists to begin to extend their interest to other areas of contemporary life. After nearly two decades of this ‘contemporary’ archaeology, and with an emphasis on military and technological remains still often in evidence, this session aims to promote new agenda, by:

- exploring the specific contributions archaeology can make to the contemporary European past;
- critically assessing how an archaeological understanding of its buildings, monuments and artefacts can create new insights into a supposedly ‘familiar’ past; and
- presenting new examples of good practice that could provide indications of a future direction.

Contributions are welcome on any of the above, especially where new approaches are presented, or which illustrate potential through innovative and interdisciplinary studies. Archaeologies of the Cold War remain in vogue, as significant new contributions continue to be made to our understanding of this important period of history. But here we seek to contextualise it, exploring the various ways in which archaeologists – and others – can improve understanding through ‘excavating’ the contemporary world.

#### **A10.01: War, cold war, and the ambiguity of landscape: A case from the county of Troms, Norway**

by Anders Hesjedal (Troms County Council, Norway)

During the 1950 the northern part of the Norway, especially the county of Troms became the central part of the Norwegian NATO defense.

In the 1980 a land fortification system, the so called *Frøy linje* consisting of 299 installations were established in Troms. Here a potential attack from the Soviet Union was planned to be stopped. After the Cold War this system went out of use.

The same areas were central for the Germans when they in 1944 withdrew from Finland and the northwestern part of USSR and into Norway. The *Lyngen linje*, with ca. 550 defensive postures, was constructed by POWs mainly from USSR, as a defense system against the Soviet army.

This landscape is loaded with opposing values. It is a palimpsest of traces from occupation, terror and war crimes during WW2, and from the northwestern corner of NATO and the “free world” during the Cold war. This gives the landscape an ambiguous status of meaning. It is now in a transformation process where the physical remains, both from WW2 and the Cold War, plays important roles.

#### **A10.02: ‘The Elephant’: Another Image of Cold War Sweden**

by Mats Burström (Stockholm University, Sweden)

Growing up in Sweden during the 1960s and ‘70s you were taught that Sweden was a kind of exception on the political world stage. Sweden had not been at war for more than 150 years, it was a welfare state with a high degree of social security, and its mixed economy supposedly combined the best of market economy and planned economy. Furthermore, according to the official rhetoric Sweden was military non-aligned aiming at neutrality in war. To a youngster, Sweden seemed to be one of the most peaceful and best places in the world to live in. Now, after the end of the Cold War, parts of this official image have been disproved by historical facts made public. While these flaws in the façade can be grasped on an intellectual level, the strongest impression is left through experiencing some of the installations that were made preparing for war. One of these installations is ‘the Elephant’, a constructed rock shelter from which the civil defense of Stockholm was to be directed during wartime. Today ‘the Elephant’ is a time capsule reminding you of a 1970s that you back then never realized was there.

### **A10.03: The Salpa Line – World War II defence line in the Cold War**

by [John Lagerstedt](#) (*University of Helsinki, Finland*)

The Salpa Line is a fortification chain, which was built 1940–1944 against possible offensive of Soviet Union. Defence line was 900 kilometers long and is located in Eastern Finland along the border. Fortifications were never used in combat. The Salpa Line was formally secret until the late 1980's. The defence line lost its military importance finally in the end of 20th century. The Finnish National Board of Antiquities funded an archaeological survey of the fortification line in 2009–2012.

In the beginning of the Cold War, official military threat was the Western alliance's attack to the Soviet Union through Finnish territory. Finland was independent country but belonged undoubtedly to the Soviet sphere of influence. Official operation plans of the Finnish General Headquarters in the 1950's did not handle Soviet Union as a threat. Defence plans from the 1960's are still classified. However, finds from the archaeological survey indicate that the fortifications against the east were anyway under ordered maintenance and well kept during those decades. What was the operational status and significance of the Salpa line during the Cold War years? Is there discrepancy between official written documents and archaeological finds concerning the Salpa line?

### **A10.04: Iron Curtain Archaeology in Novohradské hory in South Bohemia**

by [Michal Bureš](#) (*University of West Bohemia, Czech Republic*)

Originally symbolic term "Iron Curtain" materialised during the years 1951–1952 in former Czechoslovakia in the system of engineer barriers and other components. On the very south of Bohemia on the borders with Austria those barriers cut off from the country number of villages, hamlets and even small towns, which were thus sentenced to extinction. Houses were demolished or just fell down; sophisticated barriers established alongside the state borders have been accompanied by bunkers, border guard barracks, watch towers etc. Extensive areas of former settlements, fields and pastures were forested. In the sixties of 20<sup>th</sup> century the guarding strategies have changed, barriers were moved miles from real borders towards the heart of the country and the military area became even larger. But by the end of 20<sup>th</sup> century military devices are already deserted. Paper follows the change of mostly rural countryside to the military area and back in selected area during last 68 years and examines the archaeological reflection of such processes.

### **A10.05: The Underground Cold War Heritage of Malta**

by [Antoine Abdilla](#) (*University of Malta, Malta*)

The Cold War heritage of the Maltese Islands, particularly its underground component, is still largely undiscovered. Malta's role as an outpost of the British Empire and consequently of NATO led to the development of elaborate defensive structures and other preparations for nuclear war, set up and maintained in secrecy until the end of the Cold War. Most of these facilities had become obsolete and redundant by the 1980s, resulting in their decommissioning and handing over for other uses, or simply falling into disuse.

The heritage value of buildings from the recent past has only recently begun to be appreciated in Malta. Cold War facilities have often been perceived as too recent or common to merit protection and conservation, and have generally been overshadowed in importance by the island's equally rich built heritage from earlier periods.

An overview of the cold war underground sites identified to date will be followed by a discussion of their values and significance, and of some of the specific challenges that their conservation and management is facing today.

### **A10.06: Reduce, Reuse, Recycle: Bunker engagement and perception in post-socialist Albania**

by [Emily Glass](#) (*University of Bristol, UK*)

Between the end of the Second World War and 1991, Albania's communist leadership substantially reordered and modernised the landscape to improve the socio-economic situation of the recently liberated country. This was accompanied by an unprecedented level of military and defensive infrastructure development, particularly the creation and installation of countless reinforced concrete bunkers into the landscape. These omnipresent structures have endured beyond the communist era into the present-day and have become one of the most visual relics of Albania's Cold War. This paper will examine various types of bunker and investigate how these structures are interacted with and transformed within the context of a post-socialist Albania. The high degree of socialist bias and propaganda extolled in Albania during the Cold War will be assessed for its use value when set against these concrete bunkers and examine its



relevance within this interdisciplinary archaeological study. It may be argued that after 22 years, Albania and her people have moved beyond the bunkers; however the results of recent archaeological survey and other investigations have shown that these structures persist in the psyche and may even offer a contribution towards the future of Albania.

#### **A10.07: The Cold War and RAF Corsham**

by [Deborah Williams](#) (*English Heritage, UK*)

Beneath the small town of Corsham, Wiltshire lies an extensive range of underground tunnels some 26 miles in total. Originating from C19 quarrying, the tunnels were adapted for later military use during WWII and more recently the Cold War. Intended as a final retreat for the Prime Minister and key officials, the running of the country in the event of nuclear war was to be overseen from Corsham. Maintained for this purpose until the late 1980s, the surviving 'underground' city, is a haunting and evocative reminder of a country living under the threat of war. For the past several years English Heritage, working in partnership with colleagues in local government and the Ministry of Defence, has undertaken a comprehensive and multi-disciplinary project aimed at recording, understanding and protecting this significant site.

This paper will review our experience in looking at how to protect and manage an extensive Cold War site in a challenging underground environment. It will rehearse the lessons learned from the project and consider the wider public perceptions of the site which have been revealed through the Values study, press interest, and the public reaction to the designations.

#### **A10.08: America's Big Ear – Field Station Berlin**

by [Wayne Cocroft](#) (*English Heritage, UK*)

At the heart of Cold War Europe from its construction in August 1961 the Berlin Wall symbolised the physical divide between East and West. At the same time in Berlin's western suburbs construction began of one of the West's most important signals intelligence stations, The Teufelsberg, Field Station Berlin. For nearly the next thirty years The Wall and The Teufelsberg followed parallel paths of reconstruction and elaboration; one to tightly control physical movement and the other to exploit the barrier-less airwaves. The Wall, cutting through the city and with its human dramas was highly visible and regarded as the eighth wonder of the world. The Teufelsberg, despite its later distinctive profile sought anonymity and shrouded in woodland remained largely unknown.

In dereliction, amongst urban explorers The Teufelsberg has achieved cult status, but its historical significance is still under appreciated. Very little historical documentation is available on its interception activities, when, and if, documents are released they will have the potential to revolutionise our understanding of Cold War Europe. In the meantime, can the archaeological techniques of observation, recording, characterisation and analysis be used to decipher this monument? Should The Teufelsberg be recognised as Berlin's most important Cold War monument?

#### **A10.09: Reanimating Radar: ethnographic insights into contemporary Cold War legacies**

by [Steven Leech](#) (*University of Manchester, UK*)

Archaeology and heritage practice have made important contributions to the characterisation of Cold War studies. This is particularly evident in the documentation and designation of former military sites. However, significantly less attention has been paid to the contemporary social values and cultural practices that surround the remains of such places. This has been highlighted by recent scholarship, which has called for an exploration of the period beyond the horizon of military technologies and architecture. Nevertheless, this paper will argue that there is also a pressing requirement to revisit these assemblages, paying attention to their legacy and impact in the present. In particular, it will highlight the importance of the relationship between the senses, technology and the environment, as a means to re-examine contemporary Cold War narratives. Methodologically, it draws upon a range of approaches in order to explore the legacies and effects of militarisation upon people and place. Specifically, it is framed by insights derived from ethnographic fieldwork undertaken as part of doctoral research that examines the impact of Cold War radar and surveillance infrastructure in the UK. This includes encounters with former military personnel, long-term residents and artists, as they negotiate complex tensions between local politics, economics, materiality and memory.

#### **A10.10: No to East, No to west, only Islamic Republic! The archaeology of a Slogan based on excavations in a hidden detention**

by **Leila Papoli Yazdi** (Near Eastern Archaeology, Freie University, Germany), **Omran Garazhian** (Near Eastern Archaeology, Freie University, Germany)

Capturing the USA embassy in Tehran in 1980, the Iranian students performed they historical anger of a phenomena they named “west”. It was first just after 1953 Coup d’état that the Iranian Pahlavi king was accused to be supported by Americans. Though, Locating in a strategic part of Middle East, Iran was always the Controversial topic between Americans and Russians after the end of World War II. It was time in which USSR was supporting the largest oppositional party of Iran “*Toudeh*” while Americans supported the government. however, in more than three decades Iran government tried to control the left parties with use of violent approaches: arrest, torture and execution. It seems that all these factors resulted t social dissatisfaction and the violent revolution of 1979, a revolution whose most repetitive slogan was “no to East, No to west”.

This article is a result of an excavation in a hidden detention in Hamadan, a city in western Iran. The people of the city still believe that the site has been built by Americans while the evidences show that the building was factually used in purpose of arresting and torturing the left political activists and students during 1960s.

#### **A10.11: Cold War – The Musical**

by **John Schofield** (University of York, UK)

In 1968, Wolf Biermann, an East German musician, smuggled microphones in from the West to make a clandestine recording. The microphones were so sensitive, however, that he could not record without picking up the sounds of East Berlin, from the room next door, and outside, in the street. His response was to embrace these interventions, by opening the doors and windows and letting the sounds of the Cold War into his room. The result is *Chaussee Strasse 131*, one of many examples of musical composition that contribute to the soundscape of the Cold War, whether as responses to contemporary geopolitics (protest songs), simple interpretations of western music in the former East (jazz and punk, for example), the music of elation and celebration at the end of the Cold War (techno), or – as in Biermann’s case – through incorporating the distinctive sounds of the Eastern European landscape into recordings. Whichever is the case, and irrespective of the music, each recording comprises stories of the Cold War – narrative alongside and entangled within the soundscape. In this paper examples will be discussed and played, creating a new form of documentation, an acoustic characterisation of the increasingly remote Cold War landscape.

#### **A10.12: Archaeology of Tramps and Cold War**

by **Pavel Vařeka** (University of West Bohemia, Czech Republic), **Zdenka Schejbalová** (University of West Bohemia, Czech Republic), **James Symonds** (University of York, UK)

Widely spread Tramp movement represented a possibility of escape from the Communist régime in Czechoslovakia during 1950’s – 1980’s. This paper discuss impact of the Cold war reality on the tramp activities in former Czechoslovakia concerning spatial attributes of tramp camps (coexistence of tramps and dense network of Warsaw pact military bases) and influence of military experience on the material culture of tramps (esp. using of battle dresses and military equipment). Presented paper is based on both archaeological evidence of studied tramp sites and anthropological research of tramp communities.

### **POSTERS**

#### **A10.01-P-3: Under the radar, over the top – The Teufelsberg, Berlin**

by **Wayne Cocroft** (English Heritage, UK), **John Schofield** (University of York, UK)

Since the 1960s, Field Station Berlin high on the Teufelsberg has been a prominent city landmark dominating its western suburbs. From this vantage point high about the city and the surrounding north German plain British and American intelligence agencies harvested electronic emissions from over the Berlin Wall and across communist Eastern Europe. Twenty years ago it was one of the most advanced computer processing facilities in the world. Today, it is a partly demolished and vandalised ruin. The authors set out to use the archaeological techniques of observation, recording, characterisation and analysis to decipher this monument at the heart of Cold War Europe.

### **A10.02-P-3: Remains of Cold War in west bohemian borderland**

by **Lukáš Funk** (*University of West Bohemia in Pilsen, Czech Republic*), **Michal Rak** (*University of West Bohemia in Pilsen, Czech Republic*)

The main objective of this paper is to present research on the remains of the Cold War in Tachov region in west border with Germany and present the results of our field researches. West Bohemian borderland is very complicated area. After World War Two, there was the expulsion of Germans, but free places have never been fully replaced by new settlers. Moreover, since 1950, new communistic government started to build an iron curtain in this area, including new line of border fortification. All these activities had more adverse impact on the landscape and its use. Part of this region was forbidden area. At present, however, remains of this period and disappear due new economic activities. And because there is still few source to his period available, the archaeological methods brings lot of new data in documenting and understanding in this difficult period.

## Session A11

### Comparative Perspectives on Hunter–Gatherer Archaeology of Northeast Eurasia

Saturday, 7 September 2013, 08:30–18:30

Room: UP 104 (Building 2, ground floor)

**Organisers:** **Andrzej Weber** (University of Alberta, Canada) and **Peter Jordan** (University of Aberdeen, UK)

Europe forms the westernmost extension of the much larger super-continent of Eurasia, and while its basic archaeology is now well-studied, deeper insights into prehistory can be generated by drawing productive parallels with other parts of the world. This session aims to explore and advance such comparative approaches with regard to hunter–gatherer archaeology across northern Eurasia. The more specific focus is on Northeast Asia as it shares many geographic similarities with Northwest Europe: major river systems, complex and productive coastal areas, island chains, inland lakes, and northern seas. However, what is interesting from a European archaeological perspective is that the cultural histories in Northeast Asia are quite different including very early pottery, long hunter–gatherer sequences with evident long-term sedentism, high levels of social complexity, late arrival of farming and pastoralism, and extended forager–agropastoralist interactions into recent times. The session will present current prehistoric hunter–gatherer research in Northeast Asia placing it in a comparative context and drawing parallels with Northwest Eurasia. Papers will focus on processes of culture change, introduction and spread of various innovations, variation in human behaviour, dynamics of long- and short-distance interactions, movement of people and materials, all from the Late Pleistocene, through the Holocene and into historical times. We invite empirical studies and broader overviews as well as theoretical reflection. We anticipate and expect broad participation of scholars from Europe, North America, and Northeast Asia.

#### A11.01: Comparative Perspectives on Hunter–Gatherer Archaeology of Northeast Eurasia

by **Peter Jordan** (University of Groningen, The Netherlands), **Andrzej Weber** (University of Alberta, Canada)

We often forget that Europe forms only the westernmost extension of the much larger super-continent of Eurasia. While Europe's basic archaeology is now well-studied, deeper insights into the prehistory of the wider continent can be generated by drawing productive parallels other parts of Eurasia. This paper focuses on the archaeology of Northeast Asia highlighting some of the geographic similarities with Northwest Europe and identifying cultural differences. In both regions river systems, complex coastlines, island chains, inland lakes and northern seas provided prehistoric populations with access to transport routes and highly productive ecosystems. However, the cultural sequences in Northeast Asia are remarkably different from Europe. They include the very early appearance of pottery among Palaeolithic foragers, high levels of Holocene forager sedentism and social complexity, very late arrival of farming, and extensive forager–agropastoralist interactions continuing into recent times. We review the current state of archaeological research in Northeast Asia emphasizing culture change, the emergence and dispersal of key innovations, the dynamics of long- and short-distance interactions, and the movement of people and materials. The goal is to provide a broader context for the session and to establish a basic conceptual framework for comparative analysis of the archaeological records between these macroregions.

#### A11.02: The beginning of pottery culture in Pleistocene Japanese archipelago

by **Yasuhiro Taniuchi** (Kokugakuin University, Japan)

This paper provides an outlook for the earliest pottery culture in Japan called “Incipient Jomon”, focusing on dating, palaeoenvironment, and functions of pottery. This study is aimed at understanding why pottery use began in the terminal Pleistocene and how large the new technology affected the development of Jomon culture.

The beginning of pottery use in Japanese archipelago is thought to be a technological adaptation in hunter-gathers' subsistence to drastically changing natural environment during the terminal Pleistocene. Particularly during the sub-interglacial stage GI-1e, a remarkable increase of pottery use was observed in correlation with the expansion of temperate forest and changes in marine environment. The earliest potteries were possibly used for boiling foods, including nuts leaching and other food processing.

However, pottery-use during the Incipient Jomon was less frequent or comprehensive compared with those of later Jomon phases in the Holocene. The temporal changes in pottery quantities during the period indicate rather slackening in long term development of the pottery culture. From this perspective, the over 4,000 years of Incipient Jomon is thought to be a long term process of adaptation to natural changes in the terminal Pleistocene, in which the potentiality of pottery was being gradually broadened.

#### **A11.03: Early Upper Palaeolithic microindustry of the Trans-Baikal region (based on the materials from the Barun-Alan-1 site)**

by **Yulia Antonova** (*Buryat Scientific Centre of Siberian Branch of Russian Academy of Sciences, Russian Federation*)

Barun-Alan-1 is a multilayer site with archeological materials dating from the Paleolithic to the Bronze Age. Artifacts were revealed throughout the entire depth of the loose deposits without any sterile layers. Palaeolithic artifacts were documented in layer 6 and 7. Lithic industries from these two layers show significant differences. Layer 7 industry is characterized by protoprismatic, prismatic and Levallois techniques of stone knapping. Flakes, blades, especially small bladelets, were used for making stone tools. The main raw material was rhyolite-porphry, which can be found in abundance on mountain slopes. Layer 7 stone industry is characterised by the presence of significant microindustry component, including products of microblade knapping. Microindustry items were produced from better quality jasper-like and chert-like raw material, however, a few microtools and microblades were fashioned from rhyolite-porphry and tuff. According to radiocarbon and TL dates, layer 7 formed before 40 kya. The presence of microtools and microblades pressure flaking products in the layer suggest suggests substantial antiquity of the emergence of microblade technology in Western Trans-Baikal. This industry is one of the earliest of this kind in Northeast and Central Asia and can be compared with the microblade industry of Ust'-Karakol in Altai.

#### **A11.04: Neolithic Hunter–Gatherers in Russian Far East**

by **Aleksandr Popov** (*Far Eastern National University, Russian Federation*), **Andrei Tabarev** (*Institute of Archaeology & Ethnography, Russian Federation*), **Yuri Mikishin** (*Far East Geological Institute, Russian Federation*)

One of the principal peculiarities of the Holocene archaeological cultures in the Maritime Region of the Russian Far East is their high dependence on the climatic and landscape changes which took place during last 11,000 years. This interdependence is evidenced by the changes in archaeological cultures which coincide temporally with periods of climatic shifts. The comparison of climatic conditions and cultural dynamics in the Early and Middle Holocene suggests direct impact of natural processes (landscape transformation, changes in faunal and floral assemblages, sea level fluctuations, and air temperature and humidity) on the processes of culture change in the region.

#### **A11.05: Nephrite ornaments, hunting and connectivity among foragers and early farmers in NE Asia (ca. 8000-6000BP)**

by **Ilona Bausch** (*Leiden University, The Netherlands*)

The region comprising Japan (Jomon culture), Korea (Chulmun culture) and the Amur River region of Southeast Siberia (Rudninskaya culture) is regarded as a forager 'interaction sphere' with a long tradition of shared traits, including broadspectrum subsistence, relative sedentarism and various technologies, such as the earliest ceramics. However, the transmission of rare nephrite ornaments, originating in the Xinglongwa culture, also indicates interaction between these coastal foragers and 'Early Neolithic' communities in Manchuria. If so, what would have been the element of 'connectivity' to facilitate intercultural contacts? And did this influence economic, socio-political and ideological developments? Various lines of recent archaeological research indicate that Xinglongwa culture may have had a strong economic dependence on, as well as cosmological and social investment in, hunting wild boar and deer; a trait shared with the forager cultures. Could the broader practice of 'hunting' have been an aspect of 'connectivity' among different groups in Northeast Asia? This paper will explore the hypothesis that the wide distribution of rare nephrite ornaments is one (archaeologically visible) way in which intergroup interaction could have been mediated via gift exchange, e.g. transmitted during the distant expeditions of specialised hunters.

#### **A11.06: New Insights into the Neolithic of Trans-Baikal and Mongolia**

by **Natalia Tsydenova** (*The Institute of mongolian, buddhist and tibetan studies of SB RAS, Russian Federation*)

This paper focuses on the archaeology of Trans-Baikal, Eastern Siberia, a region that contains sites with examples of early pottery traditions (e.g. Kuzmin and Orlova, 2000), including the Krasnaia Gorka site, which dates to 8345±66 (KIA42073)(Harts et al., 2012). New evidence has also been gained from excavations at Yartsi Baikal'skie and Mukhanskie ozero. Interestingly, these sites include ceramics with cord impressions of "Khaita" and "Posol'sk" types. In the neighboring Priol'khonie area, examples of "Khaita" ceramics have been dated to 7900 BP (Goryunova, et al., 2011). Correlation of pottery wares across these and other archaeological sites indicates that there was a long-term tradition of making cord-impressed pottery throughout the Trans-Baikal region, and that this tradition extended into adjacent territories, including East Mongolia, where cord-impressed pottery is found at a range of sites including Barga El's and Toogotyn's gol-V (Tsydenova et al., 2012).

**A11.07: Complicated consequences – overkilling of Brown Bear as a special local product of the Okhotsk culture: Comparative study of bear rituals and ceremonies between East and West Eurasia**

by Tetsuya Amano (Hokkaido University, Japan)

On the island of Hokkaido, iron tools were introduced from the outside and gradually replaced stone tools. This process started during the Okhotsk culture period (600–1200 A.D.). It is unclear however, what kind of items the iron objects were exchanged for. This study explores the conspicuous pattern in which the introduction of iron tools in Hokkaido coincides with several important changes to the symbolic importance of the brown bear. First, the beginnings of custom of rearing bear cubs coincide with the beginnings of the Okhotsk culture. In spring, bear cubs orphaned by hunting adult bears in the dens were not killed but rather carried to the village and reared there until the following winter. The purpose of this was to increase the volume of the gall bladder and size of the fur. Second, bear skulls were increasingly enshrined, cases with in excess of 100 skulls are not uncommon, in designated places within dwellings. Third, the age distribution of the bear population gradually changed, particularly after 900 A.D., and bear hunting territories expanded and shifted geographically. Lastly, the bear cub gift system between the Okhotsk culture and Epi-Johmon (Pre Ainu) culture was also established around the same time to conciliate and to maintain social relationships.

**A11.08: Resilience and social-ecological change in the late prehistoric Okhotsk culture of eastern Hokkaido**

by Mark Hudson (University of West Kyushu, Japan), Hideyuki Onishi (Doshisha Women's College of Liberal Arts, Japan), Kara Hoover (University of Alaska Fairbanks, USA), Mami Aoyama (University of West Kyushu, Japan)

Spreading south from Sakhalin in the mid-first millennium AD, the Okhotsk culture occupied northeastern Hokkaido and the Kuril Islands between the sixth and twelfth centuries. The Okhotsk combined settled marine hunting and fishing with raising pigs and dogs and some plant cultivation. In northern Hokkaido, the Okhotsk culture ended rather abruptly when the Ainu expanded across the Soya Straits into Sakhalin. In eastern Hokkaido, however, the transition was more gradual and involved an intermediate Tobinitai stage between Okhotsk and Ainu. This paper uses resilience theory to examine how Okhotsk groups in eastern Hokkaido adapted to the substantial environmental and socioeconomic changes associated with the medieval warm period and with expanding commercial networks centered in Song China. The archaeological record of the Okhotsk-Tobinitai-Ainu transition is analyzed using the classification of social transformations developed by Michelle Hegmon and colleagues (2008). It is concluded that the eastern Hokkaido Okhotsk displayed high resilience to the negative impacts of change within a high-energy adaptive cycle. Insights from occupational science are used to suggest that continuities in everyday tasks within Okhotsk society helped maintained well-being and build resilience.

**A11.09: Evaluating the prestige goods model among hunter-gatherers in the Cis-Baikal, Siberia: implications for understanding long-distance interaction and political integration during the middle Holocene**

by Ben A. Shepard (University of California, Los Angeles, USA)

This paper examines the social role of nephrite ornaments that hunter-gatherers inhabiting the Cis-Baikal (Russian Federation) interred in human burials. Many authors suggest that in addition to serving as chronological indicators of the Early Bronze Age (~3000-2000 BC), these objects also reflect the elevated social status of the persons whose bodies they adorned. Here I present the results of an analysis of formal variation in a large sample of nephrite ornaments from multiple sites throughout the Cis-Baikal region as well as data on elemental variation collected using portable X-Ray Fluorescence (pXRF) spectrometry. On the basis of these data, I outline a model of the production and circulation of nephrite ornaments at the inter- and intra-community scales and evaluate the extent to which association with these objects was circumscribed to elites.

**A11.10: Plant foragers in Neolithic north China**

by Li Liu (Stanford University, USA)

Recent studies of plant residues and usewear patterns on grinding stones have revealed an unexpected picture of Neolithic subsistence economy in north China. These processing tools were used primarily on wild plants, including tubers, roots, and acorns as well as, to a lesser extent, on domesticated millet, suggesting a broad spectrum subsistence strategy. Since grinding stones constitute significant proportions of lithic assemblages over a broad region during the early and middle Neolithic periods, the functional study of these tools, integrated with other archeological and scientific methods, has great potential for our understanding the foraging behavior of populations who were also early farmers. This paper reviews several case studies, and discusses some regional variations of plant exploitation characteristic of the trajectories of Neolithization in north China.

#### **A11.11: Eating fish makes you older: Carbon reservoir effects in middle Holocene Cis-Baikal, Siberia**

by **Andrzej Weber** (University of Alberta, Canada), **Christopher Bronk Ramsey** (Oxford University, UK), **Rick Schulting** (Oxford University, UK), **Robert Losey** (University of Alberta, Canada), **Olga Goriunova** (Irkutsk State University, Russian Federation), **Vladimir Bazaliiskii** (Irkutsk State University, Russian Federation)

This study is part of the international “Baikal–Hokkaido Archeology Project” set up to examine hunter-gatherer cultural dynamics in Northeast Asia. Comprehensive examination of the rich collections of human remains plays a prominent role in the project. While various macroscopic osteological methods and geochemical tests provide a broad range of useful insights into forager activity patterns, extensive radiocarbon dating is being used to develop the necessary temporal framework for all aspects of this investigation. In the Baikal region, the widespread use of freshwater (lake and river) resources is of importance for two main reasons: (1) for understanding forager subsistence and dietary patterns; and (2) understanding the potential offsets introduced in radiocarbon dates of human remains. To control for the offset, we conducted a series of c. 30 paired radiocarbon tests on terrestrial herbivore and human samples from sealed archaeological contexts (i.e., graves). The offset ranges from 200 to 500 years depending on diet and geographic location. These results will have impact on our understanding of the general and local culture history, patterns and duration of cemetery use, and the processes driving the middle Holocene culture change in the Baikal region.

#### **A11.12: Maritime adaption of hunter-gatherers in Japan based on ancient DNA identification of the exploited albatross (Aves: Diomedidae) species**

by **Masaki Edo** (Hokkaido University, Japan), **Hiroko Koike** (Kyushu University, Japan), **Hiroyoshi Higuchi** (Keio University, Japan)

Examinations of the maritime adaptations of hunter-gatherers have focussed primarily on mollusk, fish, and mammal remains from archaeological sites. Because the reconstruction of past human behaviour based on archaeofaunal remains is additive in nature, a wide range of materials should be used for this purpose. There are three Diomedidae bird species in the northern Pacific: Short-tailed Albatross *Phoebastria albatrus*, Black-footed Albatross *P. nigripes*, and Laysan Albatross *P. immutabilis*. Among these species, the former forages mainly at the edge of continental shelves, whereas the others forage away from them. Therefore, we expected that data about the species of albatross remains found in hunter-gatherer sites would provide valuable information about the maritime adaptations of the hunter-gatherers. We tried to identify albatross remains from hunter-gatherer sites in Japan using ancient DNA analysis. Thus far, 80 bones, all Short-tailed Albatrosses, have been successfully identified. Medullary bones, which are formed in the marrow cavity of breeding female birds, were found only in one sample, indicating that intensive hunting occurred by the ocean near the archaeological sites rather than at the birds’ breeding grounds. These strongly suggest that hunter-gatherers in Japan hunted this species at the edge of the continental shelves.

#### **A11.13: Eastern pioneers in westernmost territories? New perspectives on Mesolithic hunter-gatherer large scale interaction and migration within Northern Eurasia**

by **Hege Damlien** (University of Stavanger, Norway)

Investigations of the earliest Mesolithic settlement in southern Norway have until now been discussed in relation to a western cultural tradition, and carried out in the shadow of the Maglemose culture and a southern Scandinavia typological framework. In this paper, I will argue that the typology and chronology of the western European areas is not immediately applicable in this region. Ongoing technological analysis of lithic blade assemblages from early middle Mesolithic sites (9000-8500 uncal BP) in southern Norway, documents a well-developed conical core pressure blade concept, typical to the eastern European “Post-Swiderian” tradition. The early appearance of the conical core pressure blade concept is suggested to represent the first migration of people and technological knowledge from the eastern Russian plains into the northwesternmost part of Europe. As well as demonstrating the influence of an eastern technological tradition in north-western Europe, one focus pertinent to this paper is to present a more dynamic approach to material culture which provides new perspectives on large scale human interactions and migrations within Eurasia in the early Holocene.

#### **A11.14: Precocious foragers along the Shinano River and their place in understanding Eurasian fisher-gatherer-hunters**

by *Simon Kaner* (*Sainsbury Institute for the Study of Japanese Arts and Cultures, UK*)

Understanding cultural processes among foragers continues to challenge European archaeology. It is fashionable to eschew engagement with the ethnographic record, and we have yet to develop methods to enable a sophisticated comparative understanding of the increasingly high resolution datasets available from various parts of Eurasia. This paper argues that the notion of precociousness may be of use in understanding the quasi-historical trajectories taken by prehistoric Eurasian foragers, and provides the basis for an enhanced set of narratives about how they created and reproduced their social and conceptual worlds.

The Shinano and Chikuma river drainage comprises the longest river in Japan and was home to one of the greatest densities of fisher-gatherer-hunters in the prehistoric temperate zone. These foragers left behind exceptional assemblages of Late Pleistocene pottery, and their Jomon successors created one of the most elaborate styles of the Jomon tradition, the Flame style pots, dating to the middle of the fourth millennium BC.

Drawing on work undertaken by the Shinano River Project over the last several years, this paper examines these two materialisations of the Jomon worlds of the Shinano and Chikuma Rivers and sets them in the context of other quasi-historical narratives about Eurasian fisher-gatherer-hunters.

#### **A11.15: Ethnozoarchaeology of seals and hunters on Lake Baikal in Siberia**

by *Tatiana Nomokonova* (*University of British Columbia, Canada*), *Robert Losey* (*University of Alberta, Canada*)

The seals inhabiting Siberia's Lake Baikal are involved in a suite of meaningful interactions with local people, both in the present and in the far distant past. Our recent ethnozoarchaeological work with seal hunters here has revealed that relationships with and understandings of these animals are complex and sensory, involving detailed knowledge of seals' sounds, smells, tastes, fur qualities, appearances, and behaviors. Hunters and their families maintain relationships with these animals by acting to stay in good standing with local spirits and through proper treatment of the animals' bodies after death. Sealing here also takes place within a landscape laden with spirits and deities. The region's archaeological record suggests that meaningful relationships with seals could extend back to nearly 10,000 years ago. These relationships are in part evidenced by the skeletal remains of seals found at habitation sites and within human graves and stone features associated with sacrifices. Further, seal images can be found on local rock art panels and as portable objects. Together, this suggests that peoples' relationships with Baikal seals cannot be viewed simply as interaction between predator and prey, but also were meaningful, personal, and tied to place.

#### **A11.16: Hunter-Gatherers and the Arrival of Pastoralists: Cis-Baikal's Other Mortuary Hiatus**

by *Robert Losey* (*University of Alberta, Canada*), *Tatiana Nomokonova* (*University of British Columbia, Canada*)

This paper examines the arrival, development, and nature of pastoralism in the Cis-Baikal region of Eastern Siberia, Russia. The period when the first Central Asian pastoralists arrived in this region is poorly understood from a number of perspectives. First, a substantial temporal gap exists between the region's Middle Holocene forager mortuary record and that of the earliest pastoralists, who arrived here ~3500 cal. BP. Little is known about the contacts between these groups. Second, directly dated remains of the earliest domesticated herd animals date even later, closer to ~3000 cal. BP. What was the structure of subsistence practices during this and later periods of pastoralist presence in the region? Faunal assemblages with remains of domesticated herd animals here contain abundant remains of wild animals, including remains of aquatic fauna such as Baikal seal and fish. Pastoralists' dependence on aquatic fauna from Lake Baikal and its outlet is important, because a significant old carbon effect recently has been documented in the aquatic fauna from these bodies of water. This may be causing a significant bias in the radiocarbon dates on the region's pastoralist skeletal remains.



## Session A12

### Comparative Perspectives on Paleolithic Socioecodynamics

Friday, 6 September 2013, 08:30–13:00

Room: UP 115 (Building 2, ground floor)

**Organisers:** **Jonathan Haws** (University of Louisville, USA), **Julien Riel-Salvatore** (University of Colorado, Denver, USA) and **Nuno F. Bicho** (Universidade do Algarve, Portugal)

The coarse-grained time scales of the Paleolithic archaeological record and the wealth of paleoecological information available for those periods lend themselves well to studies of integrated cultural and ecological phenomena operating in the 'longue durée'. As a result, complementary conceptual frameworks including, but not limited to, niche construction theory and resilience theory have recently been used to generate new insights on the intricate history of hominin-environment interactions. Most informatively, they have been able to explicitly show the range of ways humans have been active agents in shaping the various socio-ecological niches they occupied in the Plio-Pleistocene. This session will serve as a forum for the discussion and integration of various research projects that have given active hominin-ecosystem engagement a predominant place in efforts to reconstruct detailed behavioral adaptive models for hominins, with the goal to outline a coherent theoretical agenda for future investigations of Paleolithic socioecodynamics.

#### A12.01: Neandertals at the bottom of the Dalmatian Dinaric Alps

by **Rajna Šošić Klinžić** (Faculty of Humanities and Social Sciences, Croatia), **Nikola Vukosavljević** (Faculty of Humanities and Social Sciences, Croatia), **Ivor Karavanić** (Faculty of Humanities and Social Sciences, Croatia)

Dalmatian Dinaric Alps with their peaks up to 1.800 m present natural barriers, but also places people inhabited, visited and crossed. This environment is defined with its geological base, the carst. As today, in the late Pleistocene probably some of these areas were not very suitable for humans to settle around. Geological data, geographical data and position of Middle Paleolithic sites suggest several regions Neandertals inhabited. Presence of the raw material was determined as one factor for selection of a certain area. By the western outer slopes of the Dinaric Alps spreads Eocene and Oligocene sediments where chert nodules can be found, and in that type of environment Middle Paleolithic sites in the hinterlands of Zadar and in area of Kašela were found. In this paper we will try to establish whether there are some more mutual factors of these two areas that could be important for Neandertals to inhabit these areas.

#### A12.02: Paleolithic niche construction and socio-ecology in Italy

by **Julien Riel-Salvatore** (University of Colorado, USA)

This paper presents data from the Middle and Early Upper Paleolithic record of the Italian peninsula to highlight how niche construction theory (NCT) provides a novel framework to understand both Neandertals and early European Homo sapiens as active agents in their evolutionary histories. In contrast to approaches that portrayed one or both groups as largely reactive to external stimuli, niche construction emphasizes the contingent outcomes of evolutionary processes shaped both by externalities and the long-term, often unanticipated impacts of past human groups on their socio-ecology. This perspective forces a shift away from seeing the social and natural environments as largely static, changed only by global-scale climatic phenomena. The emerging framework emphasizes the dynamicity of human socio-ecology as the fundamental backdrop of human biological and cultural evolution, and it permits a novel appreciation of the internal variability of technocomplexes like the Mousterian, the Uluzzian and the proto-Aurignacian that coexisted at least for a few thousand years in the comparatively small geographical area that is the Italian peninsula.

#### A12.03: Of Neanderthal niches: the case of western Iberia

by **Telmo Pereira** (University of Algarve, Portugal), **Nuno Bicho** (University of Algarve, Portugal), **Jonathan Haws** (University of Louisville, USA), **Michael Benedetti** (UNC-Wilmington, USA)

Raw materials are relatively stable elements in the landscape. Since lithic artifacts are one of the most durable evidences of human behavior, one can associate raw material sources and the raw material on the artifacts were manufactured to infer behavioral patterns, territoriality and, consequently, ecological niches.

In this paper we approach the variability within lithic raw materials in the set of Mousterian sites from western Iberia to infer Neanderthal territorial niches. Data seem to indicate the existence of at least two different synchronic niches, one located inland and other at the coast.

#### **A12.04: From the mountains to the sea: Paleolithic ecodynamics in Portuguese Estremadura**

by [Jonathan Haws](#) (University of Louisville, USA), [Michael Benedetti](#) (University of North Carolina-Wilmington, USA)

We report findings from a geoarchaeological survey to study human response to environmental change in the Late Pleistocene of Portuguese Estremadura. Environmental change affected resource availability through space and time and survival of populations living in these areas would have necessitated flexible adaptations. We use a landscape perspective to integrate regional and site data to interpret Paleolithic settlement patterns because geological and archaeological processes operate at many temporal and spatial scales. Artifact concentrations dated to MIS 5, 3 and 2 are associated with raised coastal deposits, eolian and fluvial sands in the diapiric valley and chert sources in the uplands.

#### **A12.05: Coastal resources and the impact on early human adaptations in Southern Iberia**

by [Nuno Bicho](#) (Universidade do Algarve, Portugal)

Seascapes and coastal resources have been very important in the human adaptations across the world for modern behaviour. This is due to a variety of factors, among which nutrition and symbolic conduct are perhaps the most important with a direct impact on human evolution and the emergence of anatomically modern humans.

This paper focus on the use of coastal resources and coastal settings by Neanderthals and early modern humans in Southern Iberia. It will also review general concepts applied to the theoretical framework of coastal ecodynamics of early human adaptations.

#### **A12.06: Projectile technology variability as reflex of behavioral-ecological adaptation during the Gravettian from Southern Iberia**

by [João Marreiros](#) (Universidade do Algarve, Portugal), [Nuno Bicho](#) (Universidade do Algarve, Portugal)

Lithic projectile technology is one of the most important keys to recognize hunter-gatherers technological, cultural and ecological behavior. The origin and expansion of Gravettian industries in Eurasia is undoubtedly associated with the first evidences of technological and cultural regionalisms among Modern Human populations from where lithic weaponry variability is well-known. During the last decades different morph-types have been associated with distinct chronological phases and ecological/regional territories where such Gravettian polymorphism is recognized.

Until recently this polymorphism was unseen from Southern Iberian Peninsula. However, in this paper we use new data from lithic projectile technology, organization and variability from Southern Iberia as a proxy to understand early AMH technological choices, subsistence strategies, cultural and stylistic regional boundaries and ecological behavior. This data show that lithic projectile technology and design variability reflect distinct regional *facies* from a diachronic and regional scale.

#### **A12.07: Resilient adaptive patterns in the Upper Paleolithic site of Vale Boi (Southwestern Iberia)**

by [João Cascalheira](#) (Universidade do Algarve, Portugal), [Nuno Bicho](#) (Universidade do Algarve, Portugal), [João Marreiros](#) (Universidade do Algarve, Portugal), [Telmo Pereira](#) (Universidade do Algarve, Portugal), [Tiina Manne](#) (University of Queensland, Australia)

The existence of ecological and cultural refugia within Iberia during the Upper Paleolithic is now rather evident. Vale Boi, located close to the southwesternmost point of Iberia, may represent one of these refugia, since its lengthy and fairly complete archaeological record clearly attests that the region was an attractive location for hunter-gatherer communities for over 10,000 years.

From the first Modern Human occupations at Vale Boi, c. 32 ka cal BP ago, a set of very specific cultural adaptive markers seem to have been developed in response to the particularities of the regional ecological background. Some of these strategies, such as intensive subsistence practices, raw-material specialized use, reduced lithic blank dimensions due to small/low-quality chert blocks, among others, were resilient through time and impermeable to the major shifts in the techno-typological novelties brought about with the advent of each Upper Paleolithic technocomplex. Even with the appearance of quite unique and broad-scale technologies, like the Solutrean, regional markers and identity seem to have been kept.

This paper will focus on long-term adaptive choices and how hunter-gatherers inhabiting Vale Boi manage to absorb change and re-organize their system under new technocomplex cultural patterns while still retaining, efficiently, the same regional adaptive idiosyncrasies.

**A12.08: An inter-regional comparative approach to understand variations in hunter-gatherer iconic and non-iconic art from Central and Eastern India**

by **Ruman Banerjee** (University of Bristol, UK), **Alistair Pike** (University of Southampton, UK)

Central India is comprised of different eco-geographical and eco-geological niches accommodating diversity in iconic art and non-iconic art.

Hunter-forager iconic art shows a shift from naturalism towards abstraction. In some restricted localities of India this linear pattern was altered by the introduction of stylistic designs implying the evidence of skilled evolved forms portraying a transitional phase. Comparative chronostylistics and technostylistics might suggest boundaries among these complex over laps.

This paper aims to approach the problems of periodic overlaps, coexistence, absence and/or presence of several figurative or schematic forms of art in different rock-shelters of Central and Eastern India delineating the comparative methodology to understand specific criteria of diversity and inter-regional variations.

## Session A13

### Deliberate fragmentation revisited. Assessing social and material agency in the archaeological record

**Saturday, 7 September 2013, 08:30–18:30**

**Room:** EP 130 (Building 1, ground floor)

**Organisers:** **John Chapman** (University of Durham, UK), **Antonio Blanco-González** (University of Durham, UK) and **Jasna Vukovic** (University of Belgrade, Serbia)

The definition and testing of the premise of the deliberate fragmentation of material culture has been researched for over a decade (Chapman 2000; Chapman & Gaydarska 2007). During this timespan the premise has witnessed a number of substantial developments and has also received some insightful criticisms (Brittain & Harris 2010). This research topic has been addressed in previous EAA Annual Meetings, giving special attention to its archaeological recognition and interpretation (Bournemouth, 1999) or focusing on the technical concerns for re-fitting (Cracov, 2006). Currently the social practice of fragmentation is inseparable from other intertwined topics dealing with the formation of the archaeological record. Thus, this session draws upon recent theoretical proposals such as the appraisal of intentionality in depositional practices, materiality, ritualisation and everyday behaviour, identity and personhood and alternative ontologies. This session is aimed at gathering together different approaches related with the fragmentation of material culture within a broad spatial and temporal framework. It is designed to discuss representative case studies involving both methodological and interpretative concerns. The proceedings of this session will be published as a peer-reviewed monographic volume edited by the organizers.

Prospective speakers in this session are expected to address some of the following research issues:

- Context-specific case studies for testing the deliberate fragmentation premise with a wide range of materials (fired clay/ceramics, stones from orthostats to microliths, metal, animal and human bone, wood, shell, egg-shell).
- Purposeful/meaningful practices in the archaeological record: deliberate breakage, mobility of fragmented material culture (its dispersion and reassembly), selective and structured deposition.
- Taphonomical and biographical accounts, specially addressing the life cycle of objects prior to enter the archaeological record: life beyond the breakage; patterns for recognizing deliberate/unintended breakage; middening and other transitory depositional contexts; reuse of material culture; definite depositional contexts.
- Social interpretations of the patterns of intended fragmentation, mobility and deposition of objects in the archaeological record (tokens, relics/heirlooms, presencing, enchainment, quotation, etc).

#### **A13.01: Towards an integrated theory of fragmentation: the fragmentation of place**

by **John Chapman** (Durham University, UK)

In the last decade, archaeologists have made increasing use of the fragmentation premise – the widespread social practice of deliberate object fragmentation and the consequent re-use of the ensuing fragments in an extended life ‘after the break’. Research has focussed on two poles of identity formation –beings and things– to the detriment of *places*. However, an integrated theory of fragmentation cannot be developed without considering the fragmentation of place. The building blocks of such a consideration already exist, awaiting consolidation.

Archaeologists have long recognized that ‘raw materials’ have been extracted from, and moved across, the landscape for ‘local’ use. In contrast to the economising tendency in processualist exchange studies, post-processualist approaches have highlighted the active role of material culture, incorporating power strategies, aesthetic and spiritual dimensions in these discourses on exoticity. However, they overlooked the basic fact that such practices relied on the literal fragmentation of places in the landscape and their deliberate re-use in other places. The enchainment of places matches in importance that of persons through the practice of object or bodily fragmentation.

In this paper, I begin the creation of an integrated theory of fragmentation including all three key elements of the story: places, beings and things.

### **A13.02: On the partitive nature of Minoan anthropomorphic figurines**

by **Celine Murphy** (University of Kent, UK)

Fragmentation is rarely addressed in Minoan peak sanctuary anthropomorphic figurine studies. Although most of these artefacts were discovered in fragmentary conditions, it is generally assumed that their breakage was accidental. It is also often assumed that they were designed for single use, and that surviving fragments consist of discarded material. However, following the creation of a 'completeness index' for the figurines from Gonia-Philioremos, and following experimentation with their manufacture and fragmentation, it appeared that different body parts occurred in unbalanced proportions on site, and that the figurines' material structures facilitated particular breakage patterns.

Building upon these results suggesting the performance of intentional fragmentation and deliberate removal or deposition of appendages, this paper explores the significance of figurines as interrelated parts. I suggest that their ritual salience results not from their existence as solid, representative, objects – as is usually believed – but from their existence as associated parts continually engaged in negotiation with each other, their environment and individuals, especially before and after their presence on site. Indeed, it is these anthropomorphic bodies' partitive nature – defined during manufacture and epitomised during fragmentation – which renders them ritually appropriate rather than their visual appearance, as is usually believed.

### **A13.03: Refitting materiality/ hidden narratives. Heavy residue analysis at the Neolithic site of Çatalhöyük, Turkey**

by **Ana Bezić** (Faculty of Humanities and Social Sciences, Croatia)

Objects used in fragmentation and enchainment debates were mainly found in 'special' contexts such as graves, hoards, and structured deposits. But, what if these 'objects' are not immediately visible and their narrative potential is at a different interpretative scale altogether? In this paper, I would like to complicate categories of fragmentation and enchainment further to include heavy residue material and their deposits. This paper argues that identity at Çatalhöyük is produced through two complementary temporal and spatial practices: the practice of 'reassembling' objects and the practice of rendering these objects invisible. Drawing on the Latour's concept of assemblage, I argue that identity at Çatalhöyük is being shaped and negotiated through the process of making clay into floors, walls and features found inside the buildings. Heavy residue materials found in clay and their individual genealogies provide the entry into the world that goes beyond 'the house' and local relationships. My archaeological work and analyses of heavy residue material demonstrate that place-based yet 'translocal' situations, such as ones observed at Çatalhöyük, have networked a myriad of material objects, environment, buildings and people into social relations which account for the making of particular kinds of identities that are momentary, fleeting and changing.

### **A13.04: From Midden to Pit: The Fragmentation and Curation of British Neolithic Pottery**

by **Ben Edwards** (Manchester Metropolitan University, UK)

During 2009 and 2010, at Milfield, Northumberland, northern England, a very rare *in-situ* Earlier Neolithic occupation deposit was excavated within a ditched enclosure, in close association with a post-built rectangular structure. This occupation deposit, a possible midden, contained several hundred sherds of Carinated Ware pottery, and probably represents the disposal location for activities undertaken within and around the enclosure.

This paper presents the results of abrasion and fragmentation analyses of the potsherds from Milfield, and sets them in the context of previous studies undertaken on another large assemblage of Carinated Ware pottery from the pit-site of Thirlings, less than a mile distant. This previous work on pit assemblages was forced, due to the nature of the evidence, to merely speculate on the origin and curation of sherds, but the excavation of the new site at Milfield allows these stages in the sherd life-cycle to be more firmly established. For the first time, commonalities and distinctions in practice are identified that allow us to postulate a biography for the lives of fragmented pots, from use, to curation, to permanent deposition. This paper will also present experiments in a new method of *metric* abrasion analysis, undertaken to study the Milfield assemblage, utilising high-resolution laser-scanning equipment.

### **A13.05: Secondary Use, Reuse and Recycling of Ceramic Vessels: Evidence from Late Neolithic Vinča**

by **Jasna Vuković** (Faculty of Philosophy, University of Belgrade, Serbia)

Several ways of ceramic vessel's secondary use, reuse and recycling were recorded in Late Neolithic Vinča and they can be divided in three major categories. The first is represented by pottery fragments and whole vessels used in everyday activities. This group consists of reused whole vessels, with shape modifications made after they lost their primary

function, and tools made of vessel's shards. Analyses of their shape and use-wear were conducted, and their function in pottery making is assumed. The second is usage of pottery fragments as building material for oven foundations, and the third is usage of crushed shards as temper for pottery making. Since the pottery material was used in a variety of activities, it is argued that other suitable raw materials were lacking and that special disposal areas existed in Neolithic settlement.

#### **A13.06: A case for deliberate ceramic fragmentation: the Beaker pit in Valdeprados (Ávila, Spain)**

by Antonio Blanco-González (Durham University, UK)

This paper is aimed at broadening the discussion on the archaeological recognition of the deliberate fragmentation premise. Its main goal is to highlight the central role of cultural formation processes when reading the archaeological record. In order to do so, a later prehistoric case-study from central Iberia is presented: the site of Valdeprados (Ávila), dated to the mid-third millennium BC. The excavation carried out there in the early 1990s found an isolated pit filled with challenging, messy materials: separate Beaker and coarse ware plain sherds, human remains from a young male, some metal weapons and a tiny gold sheet. This unusual pit has been interpreted as a deviant elite burial or as a funerary deposition following a commensal commemorative feast. A wide-ranging new assessment of the ceramic assemblage focusing on its patterns of abrasion and fragmentation enables a re-appraisal of the assemblage's formation. Some physical trails denoting intended *in situ* fragmentation are discussed. As a result, a more nuanced picture is proposed. The Valdeprados deposit is likely to have been the outcome of unexpected sequential and purposeful practices, which entailed previously overlooked gestures: the gathering of already broken and discarded material and their secondary re-deposition alongside new deliberately fragmented sherds.

#### **A13.07: Remembering and forgetting at the dining table**

by Mariana Egri (Babes-Bolyai University of Cluj-Napoca, Romania)

The paper is discussing a ceramic assemblage recovered from the eastern cemetery of Ulpia Traiana Sarmizegetusa, in Roman Dacia. The assemblage consists of tableware, cooking ware, ritual vessels and a wine amphora, which were used during a funerary feast, before being systematically broken and carefully stacked into a purposefully dug pit. The functional structure of the assemblage indicates the number of participants and the convivial etiquette, but also that the deceased had a place at the table, marked by an individualised dining set that was functionally identical but morphologically different from those used by other participants.

The systematic and careful breaking and burying of the feasting assemblage could be interpreted as a purification practice, aiming to destroy items considered impure due to their connection with the death. However, these actions are more likely related to an important phase of the mortuary ceremony in which the social connections between the living world and the deceased are severed, the social persona of the deceased being symbolically "killed". The literal consumption of foodstuffs and beverage and the subsequent destruction of the dining assemblage are complementary parts of this emotional and sensorial process, in which persons, connections and memories are also consumed.

#### **A13.08: A possible case of fragmentation in Transylvanian middle Neolithic: "Lumea Nouă" painted pottery**

by Mihai Gligor ("1 Decembrie 1918" University, Romania)

In Transylvania (Romania), the Lumea Nouă middle neolithic cultural group is one of the most representative, with the important sites being Alba Iulia-Lumea Nouă, Tărtăria, Limba, Cheile Turzii-Peștera Ungurească, Zau de Câmpie, Doh, Șimleu Silvaniei. We can safely attribute painting as the only decoration technique to the Lumea Nouă cultural group communities. The painted decorations in the material researched so far are both from the bichrome and trichrome categories, and represent a way to individualize these artifacts. The painted ceramics are generally characterized by the fragmentation state in which it is constantly discovered. Up to this moment, we were able to entirely reconstruct only a few of these artefacts. The purpose of the current paper is to establish whether we are looking at a possible case of deliberate fragmentation. Is the current fragmentary state of the Lumea Nouă painted pottery due to the preservation in the ground for a long time, is it due to unsatisfactory research, or are there arguments to support intentional fragmentation?

### **A13.09: Pits and Pots: Fragmentation and deposition at Vinča site Crkvine-Mali Borak (Serbia)**

by Ana Tripković (*Faculty of Philosophy, Serbia*)

Crkvine-Mali Borak is a late Vinča settlement located in northwestern Serbia. With an explored area of 3 000 sqm, it is ranked among the most extensively excavated late Neolithic sites in Central Balkans. In this flat settlement 13 houses and 55 pits have been revealed. Pits vary in size, shape and complexity of content within. In one of the pits a human skull fragment along with an intact vessel have been discovered, thus making it a structured deposition, while the twelve pits have been entirely filled with daub. Other pits had more or less a layered stratigraphy containing mostly ceramic fragments, animal bones and stone artifacts. This paper will cover the structure of pit filling observed in relation to the scale of pottery fragmentation and taphonomic changes. In addition, pits from different parts of the settlement may indicate the spatial patterning and variability in depositional practices in this particular Vinča settlement.

### **A13.10: Whole pots, broken pots – depositions in an Early Neolithic water well**

by Renqert Elburg (*Archaeological Heritage Office Saxony, Germany*)

With archaeological ceramics, fragmentation is the rule, complete pots are the exception. Intact vessels are mostly found in 'special' contexts, be it as grave goods or, much less frequent, as depositions outside the realm of funerary practices. Hardly ever the two states are encountered within the same context.

From a Linear Ceramic well near Leipzig (Germany), dating shortly after 5100 denBC, a unique mixture of fragmented and undamaged material could be recovered. The depositions were found in a well that was disused as a source of water but anything but abandoned. After a first phase of infilling five separate episodes of deposition took place, mostly consisting of ceramics. Between the assemblages placed in the well clear differences can be distinguished in the type of material and form in which it was deposited. One of the most striking features is the use of fragmented material in several deposits, which show every sign of enchainment and further use in different contexts. Another striking feature is the deposition of newly made vessels alongside repaired pots and two specimens that were 'rejuvenated' by redecoration with a organic coating, showing all aspects of a hitherto hardly known life-cycle of Early Neolithic ceramics.

### **A13.11: Beneath the Sun all things must wear to an end at last: performative breakage of bronzes in Hårnevi, Sweden**

by Magdalena Forsgren (*Stockholm University, Sweden*)

Precious metal hoards represent some of the most spectacular remains from the Scandinavian Bronze Age. But of all hoards, assemblages of fragmented things have received least attention. This is perhaps because it has been difficult to interpret them meaningfully other than as *scrap metal hoards*; i.e. commodity stocks with broken or heavily worn things and residue collected by a smith for recycling. These have traditionally been separated from ritual hoards, creating a peculiar modern interpretative division. However, if it can be presumed that all hoards of precious and exotic material are ritually constituted, interpretations of the meaning of fragmented things must be sought. The purpose is to discuss an interpretative approach where things is considered to have actively expressed and shaped identities, social relations and cosmologies by their biographical symbolism and material qualities. Probably, no ontological difference was made between the life-cycles of persons and precious things; hence, deliberate fragmentation might be considered as the 'ritual killing' in the final performative acts of deposition. This argument stems from a large case-study of the Hårnevi hoard, containing selected pieces of various things used as regalia to express the identity of the Sun goddess as a metaphor of the cycle of life.

### **A13.12: Deliberate fragmentation or opportunistic recycling?**

by Ben Jennings (*University of Basel, Switzerland*)

The deliberate fragmentation and destruction of metal work, for example swords to be included in burials, and sickles for circulation as metal stock 'proto-currency', is well documented in the northern Circum-Alpine region during the Late Bronze Age. Other objects, such as arm- and leg-ring jewellery, were frequently deposited, in both burials and hoards, as intact objects, indicating their role in social practices and identity creation. In Switzerland's Late Bronze age, a small group of objects, namely single-sided razors, were manufactured from fragments of such ring jewellery. Does this ring-to-razor conversion represent the opportunistic re-use of broken jewellery, or the deliberate fragmentation of rings, so that their biographies can be accumulated, extended and transferred? In support of the latter option are examples of

rings with repairs (the deliberate prevention of accidental fragmentation), the occurrence of ring fragments in burials, and cleanly cut ring sections. The low number of such ring-razors may support the former possibility. The apparent absence of razors from burials of this period suggests that they were not used as creators of social identity, and that these ring-razors were probably employed as personal mnemonic devices.

### **A13.13: Learning from ‘scrap’ about Late Bronze Age hoarding practices. A biographic approach to individual acts of dedication in large metal hoards**

by Oliver Dietrich (German Archaeological Institute, Germany)

Bronze Age hoarding has been recognized in the last decades as a structured, religiously motivated phenomenon with chronologically and/or regionally differing rules on the categories and conditions of objects included, their arrangement in the find, the placement of finds in the landscape and others more. But especially the large scrap metal hoards of the Late Bronze Age still provoke interpretations as stock of founders or traders. Most approaches to identify cultic activities as the reason for their accumulation have aimed at the choice of objects, fragmentation patterns and weight systems. While these lines of thought are viable, the current paper wants to explore the issue from a different point of view. With socketed axes whose sockets were intentionally filled with deliberately fragmented metalwork, S. Hansen has pointed out a group of finds that could be crucial to our understanding of ‘scrap’ hoards. By applying a biographical approach to the changing meanings (tool-fragmentation-container-votive) of socketed axes from the Carpathian Basin it will be argued that those objects constitute single acts of dedication by individuals in larger contexts. Scrap hoards can thus be understood as long-term accumulations of votive objects and can be integrated in the social practice of Bronze Age hoarding.

### **A13.14: Fragmentation, Deposition and Death in later Bronze Age Ireland**

by Katherine Leonard (National University of Ireland, Galway, Ireland)

An association between fragmentation and deposition is a consistent feature of the Irish Bronze Age. Fragmented objects have been recovered from ‘natural’ locations, settlements, ‘ritual/ceremonial’ sites, and locations of death ritual. All categories of material culture appear to have been suitable for fragmentation, from wooden objects to bronze weapons or human bone. The dominant death ritual of later Bronze Age Ireland involved fragmentation of the human body through cremation, crushing of cremated bone, and dispersed deposition and may be related to other processes of fragmentation and deposition observed in the archaeological record.

Unlike the fragmentation of human bone which is consistent, object fragmentation is evident in some ritual depositions and not others, but when present the fragmentation often appears careful and deliberate. This inconsistency and variability implies that the deposition of a fragmented object (or the deliberate fragmentation of an object prior to deposition) was *not* an essential component of ritual deposition in general while it was an essential component of human bone deposition. This paper will consider the implications of this observation for our understanding of social processes in later Bronze Age Ireland such as the (re)negotiation of social roles following a death and/or possibilities for fractal/dividual personhood.

### **A13.15: Fragmentation patterns at a circular enclosure from the late 3rd millennium BC**

by André Spatzier (Martin-Luther-University Halle-Wittenberg, Germany), Daniel Sosna (University of West Bohemia, Czech Republic)

The circular multi-ring enclosure of Pömmelte-Zackmünde, Central Germany, is one of the few sanctuaries dated to the Late Neolithic and the Early Bronze Age in Central Europe. Its architectural design, the features and finds suggest that it served as a place for various social practices including ritual performance. The paper focuses on fragmentation differences of ceramics and stone artefacts from depositional and non-depositional contexts.

The first line of evidence consists of ceramic fragments. Based on Sherd Size Index and contextual information we identify differences between deliberate and „non-deliberate“ fragmentation. Refitting sheds light either on the place of breaking or the way of depositing broken vessels.

The second line of evidence consists of ground stone and chipped stone artefacts. Several categories of fragmentation and contextual information shows only usable tools were deliberately deposited. The distributional analysis points towards the association of space with specific meanings. Special attention is paid to use-wear of flint arrowheads to elucidate processes prior to and after the discard, thereby providing insights into the life of things.

Finally, we integrate the results and try to draw inferences about the activities that took place at this site.



**A13.16: Puzzling time: Interpreting large scale refittings of manipulated human bones, fragmented pottery vessels and stone implements from the pit enclosure of Herxheim**

by **Fabian Haack** (Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Germany), **Silja Bauer** (Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Germany), **Bruno Boulestin** (Université Bordeaux 1, France), **Anthony Denaire** (Antea-Archéologie, France), **Christian Jeunesse** (Université Marc Bloch 2 Strasbourg, France), **Dirk Schimmelpfennig** (Universität Köln, Germany), **Andrea Zeeb-Lanz** (Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Germany)

The early neolithic site from Herxheim (Palatinate, South-West Germany) is primarily characterized by over 50 deposits consisting of fragmented human bones, pottery vessels and stone tools. They display an elaborated ritual and probably cannibalistic actions including the formalized manipulation of human bodies and the destruction of parts of the material culture. The deposits were filled densely packed and mixed with soil in an enclosure surrounding a typical village of the Linienbandkeramik (LBK) and in some cases stratigraphical superpositions between them could be observed. Numerous refittings of human bone fragments, pottery sherds and pieces of destroyed massive sandstone artefacts and silices are interlinking different deposits and parts of the two pit rings of the enclosure. The horizontal and vertical distribution of the refittings shed light on the period of time, we have to assume for the execution of the rituals and the utilisation phase and complex backfilling processes of the earthwork.

**A13.17: Rest In Pieces?: A Re-Assessment of Post-Depositional Disturbance and Disarticulation of Human Remains During the English Medieval Period.**

by **Jennifer Crangale** (University of Sheffield, UK)

Peri-mortem treatment of the body during the English medieval period (c. 1066–1550) has been extensively studied. Post-mortem treatments have been largely neglected in comparison, despite there being substantial excavated and documentary evidence for post-inhumation disturbances, fragmentation and disinterment, including intercutting of burials, charnel pits, ossuaries, reburials of disarticulated individuals in boxes and bags, insertions and removal of bones into/from existing graves and tombs. These activities have consistently been interpreted on a predominantly functional basis by osteoarchaeologists, medievalists and funerary archaeologists. Collections of disarticulated and disinterred remains are routinely dismissed as representing the by-product of other liturgical and functional activities and therefore are devoid of symbolic or liturgical significance.

This paper will discuss archaeologists' attitudes towards and perceptions of archaeologically fragmented human remains. Current research indicates that disarticulated, disturbed and disinterred skeletal remains were actively curated as part of a misunderstood and frequently unrecognised medieval funerary practise. This paper will also address various issues inherent in the practise of disinterment and disarticulation, including the extent to which these activities occurred, how medieval people regarded the disinterment and fragmentation of human skeletons, the degree of intentionality and circumstance involved, and the role of such behaviour within medieval religion and society.

**A13.18: Broken bones and stones: Fragmentation in the Irish Bronze Age**

by **Kerri Cleary** (University College Cork, Ireland)

Fragments of objects are a somewhat expected discovery when excavating Irish Bronze Age settlement sites. Material culture was used, broken and discarded. Closer examination, however, suggests that some patterns in deposition, both in context and material, could indicate a purpose post-fragmentation, perhaps indicating an extension to the use-life of an artefact. This paper will begin by exploring broken stone artefacts within the archaeological record of the Irish Bronze Age, with a specific focus on the treatment of objects related to grain processing. This data will then be compared and contrasted with the way in which human bone was deposited at contemporary sites related to settlement activity, both structures and burnt mounds (*fulachtaí fia*) used for water-boiling. As this human bone is generally fragmented what can it tell us about the reasons for its incorporation into secular contexts? This paper will therefore focus on whether this breaking of human bone and stone was part of a process of intentionality or simply a reflection of formation processes and how patterns in the context of recovery can allow us to question both sides of this argument.

### **A13.19: Fragmenting and reassembling human bodies. Transformative and communicative practices.**

by **Alexander Gramsch** (*Museum Herxheim, Germany*)

Human remains form a large part of the archaeological record and yield a wealth of information – not only on age and sex of the deceased or on pathologies. Like a pot or a figurine, the body is not a natural given: Perceiving the body both in terms of material culture and as a social construction allows us to describe and analyse traces of bodily practices and interpret their social meaning. Which of these practices were deliberate, which had social significance? Just like figurines, some human bodies were broken and scattered. This paper addresses bodily practices such as partitioning, dispersion, and structured deposition in relation to burials, cremations, and non-grave contexts. Referring to anthropological debates on the socially formed body, on 'dividual' personhood, and on ritual as social practice, and using examples from a number of Neolithic and Bronze Age sites such as Windmill Hill, Kilianstädten, Cladh Hallan and Cottbus Alvensleben-Kaserne different transformative actions will be discussed: the reconstruction of social order and identity through the body; the dissolution of order; and the creation of new structures.

## **POSTERS**

### **A13.01-P-1: Ritual manipulation and fragmentation in Northern Italy Bronze Age cremation cemeteries**

by **Claudio Cavazzuti** (*Museo Nazionale Preistorico Etnografico L. Pigorini, Italy*), **Andrea Cardarelli** (*Università degli Studi di Roma, Italy*), **Gianluca Pellacani** (*Museo Civico Archeologico Etnologico di Modena, Italy*), **Vanessa Poli** (*Università degli Studi di Roma, Italy*), **Loretana Salvadei** (*Museo Nazionale Preistorico Etnografico L. Pigorini, Italy*)

The introduction of cremation, which took place during the Middle Bronze Age in Northern Italy, appears to be accompanied by new ritual customs, which involved both artifacts and bones of the deceased.

The excavations of the Middle and Late Bronze Age urnfield of Casinalbo (Modena) and the following spatial analysis of the records have documented the complexity of these practices, consisting of manipulation, fragmentation and displacement of bronze pyre goods (weapons and ornaments), vessels (cups, bowls and jars) and cremated human bones. These actions, whose symbolism is likely to be linked to the meaning of material sacrifice, were performed in two distinct areas of the cemetery, which cannot be directly referred to the pyre site or groups of burials, but it rather seems to represent a ceremonial space used repeatedly across generations.

The example of Casinalbo is quite unique, thanks to an exceptional conservation of the deposit, to the large amount of excavated burials (more than 600), and to a consistent anthropological sample size (349 examined burials). Casinalbo therefore contributes to enlighten the lack of documentation coming from other Northern Italy bronze age contexts, in terms of ritual customs, social structure and ideological frame.

### **A13.02-P-1: The Third Dimension of the Blade: social and communicative functions of macrolithic flint blades in Central and Eastern Europe**

by **Aleksander Dzybyński** (*University of Rzeszow, Poland*)

Fragmentation practices are in fact so widespread in Eneolithic cultures that we can regard them as a signum temporis, alongside a number of socio-economic transformations described by many authors. Chapman discussed this phenomenon in the context of Eneolithic materials from south-eastern Europe, contrasting two seemingly opposite trends – enchainment and accumulation. However, the phenomenon of fragmentation is also very discernible in the macrolithic flint industries of Eneolithic cultures such as the Tiszapolgár, the Lublin-Volhynian, the Funnel Beaker or the Globular Amphorae. How can we interpret this phenomenon? It would appear that the macrolithisation of flint tools in Eneolithic communities in Europe was the result of an increasing manipulation of blade length within important social communication contexts. While in the previous period, tools were made from blades which were small (4–6cm), later we see evidence of a widespread practice involving the proportional fragmentation of macrolithic blades on the one hand and the selection of blades according to their metric characteristics on the other. Assuming that the production of macrolithic blades along with all the related issues (fragmentation and repeated refashioning, selection according to metric characteristics) was reflected in linguistic communication, one can say that in the Eneolithic vocabulary, there must have evolved words, concepts and grammars that served processes which involved manipulations of blade tools that were much more complex than before.

### **A13.03-P-1: Defragmentation of primary purpose: mobile British-made brooches in contexts**

by Tatiana Ivleva (Leiden University, The Netherlands)

Brooches formed part of a dress for any inhabitant of the Roman world; they served to hold two pieces of a person's clothing together. In Roman Britain inhabitants wore brooches specific to this province and these objects rarely reached destinations outside the province, although up to now 242 British-made brooches have been identified on 102 sites across Europe. Being made in Roman Britain and brought overseas for the purpose of fastening the clothes, the brooches' functional aspect started to be overshadowed by other meanings attached to them by the variety of owners they have changed during their lifetime. Therefore, when brooches entered the archaeological record, they became a sum of all responses, aspects and (un)intentional values. Brooches were also found in the variety of contexts, suggesting that these objects must have played various roles rather than being simply functional devices. This allows to talk of a defragmentation of their primary purpose as clothes fasteners and reflects the diversity of their biographies and the biographies of their users and owners. The paper also argues that the responses of agents towards the objects and objects' 'unintentional' influence towards the agents give a texture to the understanding of *why* these 'identity-changed' clothes fasteners ended in their depositional contexts.

### **A13.04-P-1: Fragmentized Female Figurines, Some of Them With Exceptions**

by Irena Kolištrkoska Nasteva (Museum of Macedonia, The former Yugoslav Republic of Macedonia)

This presentation shows exceptional diversity of terracotta figurines (about hundred) from the prehistoric period, i.e., from the Neolithic and Eneolithic period from the territory of the Republic of Macedonia. They have been found in the past seventy years and collected within the Macedonian archaeological researches.

Chronologically, they belong to the span from the sixth to the middle of the third millennia B.C. They have mainly been discovered in the excavated remains of prehistoric houses.

These unique handmade figurines preserve evidence of the varied aspects of rich spiritual life of our ancestors. It is noteworthy that some of the figurines have been stylized, others are abundantly decorated with jewellery and elaborate hairstyles, yet all of them show emphasized female attributes, which gives us a realistic picture of the everyday life at that time.

For us, they will remain a silent testimony and reminder of the lifestyle of prehistoric woman transferred into clay. Through our observation we have noticed that the majority of the figurines are found broken intentionally. Probably they were broken in some ritual. The ones that are so called Magna Mater figurines were an exception.

### **A13.05-P-1: The Fragmentation of Human Body: Some Examples from Southeast Romania**

by Catalin Alexandru Lazar (National History Museum of Romania, Romania), Madalina Voicu (National History Museum of Romania, Romania)

The publication, more than 10 years ago, of John Chapman's book „Fragmentation in Archaeology” (2001) radically changed the vision about the archaeological research and how findings can be interpreted.

At this moment it is clear to everyone that the deliberate fragmentation of human body in the Eneolithic period in the Balkans represent a reality, documented by numerous discoveries. Thus, in several cemeteries or settlements from Southeast Romania, various human body parts are discovered isolated or in association with complete skeletons.

The aim of this paper is to explore all these aspects documented for the Kodjadermen-Gumelnița-Karanovo VI communities (fifth millennium BC) in different archaeological sites, especially those from our excavation from Sultana-Malu Roșu. It is a typical tell settlement-cemetery association with various and interesting discoveries from this category (skeletons without skulls, pits which contained only a few bones without anatomical connection or isolated bones in association with complete bodies, scattered human bones in the settlement area, etc.).

We consider that all these reflect the manipulation of the corpse (or only body parts) as part of a multi-staged burial rite.

*This work was supported by a grant of the Romanian National Authority for Scientific Research, CNCS–UEFISCDI, project number PN-II-ID-PCE-2011-3-1015.*

### **A13.06-P-1: Anthropomorphic and zoomorphic statuettes from Scânteia site (Cucuteni A3). A case study proving intentional fragmentation**

by **Cornelia-Magda Lazarovici** (Institute of Archaeology, Romania)

Scânteia site (35 km south of Iași, Romania) is well known by its very rich and expressive archaeological material. The settlement has about 14 ha and only a small area (circa 3600 m<sup>2</sup>) related to its north-eastern side was excavated; until now 13 houses and 208 pits have been investigated. A fortification system including a ditch, a counter-bank and maybe a palisade surround this site (evolving between 4332-4162 CAL B.C.).

Archaeological material is quite well preserved: largest part is represented by pottery, followed by plastic art, involving a large number of anthropomorphic (circa 900) and zoomorphic statuettes, as well as anthropomorphic, zoomorphic pots or other pots or artifacts related with cult practices, proving that the site was very much involved in cultic activities. Most of these plastic art pieces are fragmentary and only few permit their reconstruction.

We will consider in our analyze area of their discovery (houses, pits, layer), associations with other cultic or domestic artifacts. Scânteia situation will be compared with the one from other sites (completely or partially investigated) of the same culture that better reflects its position and characteristics.

### **A13.07-P-1: Stories in fragments: the case of the adornments used by the Eneolithic community from Sultana – Malu Roșu (Romania)**

by **Monica Mărgărit** (Valahia University of Targoviste, Romania), **Mădălina Voicu** (Valahia University of Targoviste, Romania), **Cătălin Lazăr** (National History Museum of Romania, Romania)

The Eneolithic site from Sultana-Malu Roșu includes two settlements (a tell settlement belonging to Gumelnița culture and a flat settlement belonging to Boian culture) and an extra muros necropolis used by both communities. Based on AMS radiocarbon dating we can estimate that the graves belong to the probable chronological interval range 5071–4450 cal BC. In the settlements and in the necropolis were identified adornments extremely various both as raw materials (shells of gastropods and bivalves, bone, marble, malachite) and as manufacturing techniques. The most obvious case is that of the fractured bracelets of *Spondylus*, whose life cycle as adornments wanted to be prolonged, because some of them are a recycling stage. Another example is that of the small adornments elements, which might be seen as fragments of more elaborated necklaces and which illustrate, in this case, a selective and structured depositing, because these fragments are not identical in the settlement, in report with the necropolis. They offer us a framework in the jewels' life, actually its last chapter, that of the abandon and in the case of the funerary inventory, it might be assimilated to a time unit and to a social context – the funerary ceremonial.

### **A13.08-P-1: The hoarding enactment at the end of the Bronze Age in the Lower Danube region**

by **Florica Matau** (Alexandru Ioan Cuza University of Iași, Romania)

For much of the twentieth century Bronze Age metalwork was exploited by the Romanian archaeologists, and not only, for its capacity to formulate chronologies, understand developments in technology, and chart the spatial extent of certain cultural frameworks. Traditionally, the hoard containing broken metal artefacts was interpreted as *foundry deposit*. Soon after the 1990s it became acceptable to regard the hoard with broken metalwork as having *ritual* connotations resulting from competition and sacrifice.

My questioning of the interpretation of such hoards intends to trace their distinctive character in terms of selective and structured deposition. Distinctiveness in terms of contents, treatment, and context of deposition would certainly call for specific interpretation of the underlying cycles of activity and the motivations behind deposition. This paper intends to identify some possible patterns for recognizing deliberate/unintended breakage of the metal artefacts through definite depositional contexts.

### **A13.09-P-1: Home-wreckers: Destruction and abandonment of an Early Bronze Age house in East Crete**

by **Barry Molloy** (University of Sheffield, UK), **Matěj Pavlacký** (University of Kent, UK)

In 2010 a domestic unit was excavated in at Priniatikos Pyrgos, East Crete, dating to the transition between Early Bronze Age I and II, ca. 2700 BC. This structure contained a typical domestic assemblage including ceramic storage, cooking and table wares, querns, mortars, stone tools and a hearth. What was atypical was that the way that the contents were deliberately decommissioned prior to deposition, and that the final acts in the house did not reflect what we might expect to be a day-to-day domestic routine.

A fragment of a copper chisel was used to grind and punch three holes in a jug, a stone mortar and quern were deposited beside this that had been fragmented and then placed back together, though several pieces were not deposited. Unique crudely made drinking vessels were broken across the floor in an apparently deliberate act. Obsidian cores were knapped in situ, and the blades were used and discarded inside the house. These and other factors to be discussed suggest that this domestic assemblage was deliberately destroyed and deposited in an event coinciding with the death of the house. Some observations will be offered on the intentionality and purpose of these acts.

**A13.10-P-1: Fragmentation, mutilation and selection inside atlantic Late Bronze Age metal hoards. A study of three hoards from Brittany, France.**

by Mélin Muriel (UMR 6566 – CReAAH, France), Fily Muriel (Conseil Général du Finistère, France), Boulud-Gazo Sylvie (UMR 65666 – CReAAH, France)

Metallic hoards of the end of the atlantic Late Bronze Age are well known for their very fragmented conditions. The fragmentation of various objects takes place within a larger pre-depositional process, still not well understood: along with breakage, extra-destruction of some objects (bending, crushing, destruction of the edges, etc.) is frequent, so is the deliberate exclusion of parts of these objects, often deposited incomplete.

A group of three sizeable hoards buried c.950-800 BC in North-western France (Gouesnac'h, Finistère) has been examined under those aspects in order to understand and reconstitute the different actions prior to the deposition. As those hoards gather more than 700 of various objects, extensively examined, it allows to distinguish the systematic gestures from the anecdotic ones. Are all the deposited pieces (according to their size, category, symbolic signification) equally touched with fragmentation? Does it reveal random actions or does it correspond to possibly codified actions? To what end is there a selection of some parts of the original pieces, once fragmented?

This study thus questions the signification of fragmentation in the context of deposition practices during the LBA, and finally leads to question the interpretation of those hoards, and especially the classical hypothesis of “founder’s hoard”.

**A13.11-P-1: That which could not be broken: Golden necklaces of the Irish Early Bronze Age**

by Ros O Maolduin (NUI Galway, Ireland)

Bead necklaces are probably the artefact type most commonly considered in terms of fragmentation. They lend themselves to splitting, curating, partial deposition and all of the social interpretations that can be placed on such practices. But what about necklaces like golden lunulae, objects that can't easily be fragmented; how does the relative unfragmentability of such objects affect their life histories? This paper aims to present a comparative account against which to view the practice of fragmentation, especially of broadly contemporary crescent shaped necklaces made from jet or other materials. It will primarily consider the signs of use wear on such objects and the contexts of their final deposition. It is particularly interested in exploring the active and/or iterative role which the materiality of object types might have played in development of practice.

**A13.12-P-1: On the fragmentation of Cucutenian anthropomorphic statuettes**

by Loredana Ștefania Solcan (Romanian Academy – Iași Branch, Romania)

The paper aims to bring into focus the issue of the fragmentation of anthropomorphic statuettes from the area of the Cucuteni culture. These artefacts, found, in variable amounts, in all Cucutenian sites, constitute one of the most telling clues on the spiritual life of the Neolithic communities from South-eastern Europe.

The majority of Cucuteni statuettes are found in a fragmented state. Despite the fact that this situation has been observed for a long time now, only recently has an explication been advanced. At the moment of speaking, the idea of a deliberate breaking of the items is embraced by many researchers.

The presentation intends to discuss several details concerning the discovery conditions of some whole or fragmentary Cucuteni statuettes. Most certainly, we will address certain aspects of the theory on archaeological artefact fragmentation outlined by John Chapman.

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### **A13.13-P-1: Depositions at rural settlements of 10<sup>th</sup>–13<sup>th</sup> century Carpathian Basin**

by **Dénes Szabó** (*Museum Móra Ferenc, Hungary*)

At rural settlements of the Árpád era (10<sup>th</sup>–13<sup>th</sup> century) in the Carpathian Basin numerous structural depositions are known, although not always interpreted as such. Amongst these depositions are deliberately hidden full, or partially broken pots and clay cauldrons. Complete and partial dog skeletons were dug, or sometimes placed in ovens and fireplaces; horse skulls are lying inside semi-subterranean buildings or pits. The filling of the semi-subterranean buildings, usually explained in the literature by natural causes, sometimes can be interpreted as a result of a ritualized refillement process. I will also investigate the question of deliberate vessel-breaking, and the deposition of ceramic fragments in abandoned buildings. Numerous vessels were found with animal sacrifices inside them, usually seen as building deposits or border markers. How can these depositions be understood, with their orientation and archaeological context taken into consideration? Can rubbish and ritual deposition always be differentiated? What kind of connections can be suggested with medieval cyclic agriculture and periodical abandonment of settlements?

### **A13.14-P-1: Glass fenestration luxurious and rare? A biography of archaeological window glass.**

by **Hilde Wouters** (*Vrije Universiteit Brussel, Belgium*), **Karin Nys** (*Vrije Universiteit Brussel, Belgium*), **Wendy Meulebroeck** (*Vrije Universiteit Brussel, Belgium*), **Hugo Thienpont** (*Vrije Universiteit Brussel, Belgium*)

Glass used as fenestration in medieval and post-medieval secular buildings is often considered as luxurious and rare. Despite this fragments are commonly found in such contexts all over Northern Europe. Due to high fragmentation; the small fragment size and difficulties in dating, these finds remain understudied. Nonetheless the evidence is sufficient to consider the functionality and biography of these glass fragments. To appreciate this highly fragmented state, it is important to understand the life-span of window glass as a building material. As such window glass fragments retain something of the personality and agency of the owners. For this research archaeological evidence is combined with theoretical insights and focuses on the post-acquisition life of window glass and human-artifact relations. The importance of glass consumption hinges on the idea that choices of fenestration express social relations and identities. The severe fragmentation of the glass is considered in relation to its functionality. The study focuses on the biography of window glass fragments in order to interpret signs of production, design, use, reuse, repair and deposition of such fragments in relation to their specific context. The aim is to develop a methodology for the interpretation of archaeological window glass collections.

## Session A14

### East-West: the role of Central Europe in the Iron Age

Thursday, 5 September 2013, 08:30–13:00

Room: UP 115 (Building 2, ground floor)

**Organisers:** **Natalie Venclová** (Academy of Sciences of the Czech Republic, Czech Republic) and **Maciej Karwowski** (University of Rzeszów, Poland)

**Discussant:** **Susanne Sievers** (Roman-Germanic Commission, Frankfurt am Main, Germany)

Archaeology of the 21st century produced new data on the Iron Age in Central Europe, in three research fields of archaeology, numismatics, and bioarchaeology. These data change the image of “East” Celtic Europe as a periphery to the western development, as it has been often suggested, presenting it as a territory where centres of primary importance existed throughout the Iron Age. The discovery of sites as Roseldorf or Némčice is not the only one that should be mentioned as strongly influencing the present model of the La Tène period development in Europe. Using the example of the Middle Danube region in its broadest sense, which historically more or less corresponds to the territory of the Celtic tribe of the Boii, the aspects of co-existence, collaboration and the mutual influences of individual Iron Age entities or territories are studied. Theoretical models concerning settlement patterns, subsistence and economy are constructed using results of the three disciplines mentioned above.

#### A14.01: Central places and cultural identities in the Middle Danube region

by **Natalie Venclová** (*Institute of Archaeology, Prague, v.v.i., Academy of Sciences of the Czech Republic, Czech Republic*), **Gertruda Březinová** (*Institute of Archaeology, Slovak Academy of Sciences, Slovak Republic*)

Early unenclosed villages in the Middle Danube region, central places existing already in the 3rd cent. BC, were recognised in the last decades. Among their roles, those of specialised production and distribution were identified by archaeology, represented, a.o., by coinage, bronze metallurgy and glassworking. The site of Némčice in Moravia is one of the prominent examples in this respect, demonstrating progressive development of the region prior to formation of the so-called oppida. The products of this centre, but also of other workshops, are chronologically and regionally specific, and reflect local identities in the Middle Danube region extending from SW Slovakia to Bavaria. Some of the earliest products of the La Tène period glass industry can be considered cultural markers in the development of the area. The Middle Danube region should be seen as a zone of East-West transfer in the La Tène Europe, both of ideas and products.

#### A14.02: The Danube region and Bohemia in the 3rd cent. BC

by **Pavel Sankot** (*National Museum Prague, Czech Republic*)

In the development of the La Tène culture, the geographic position of individual regions was also of importance. This is clearly demonstrated by the example of Bohemia where a major change occurred in the 3rd century B.C. The influx of new elements in the burial rite (deposition of pottery, animal bones, even tools in graves) along with changes in costume suggest that a significant transformation of material culture was related not only to trade contacts, but also to ideology and cultural identity. A significant change is represented by new types of ornament and its techniques, affected in this period by innovations originating in the Danube region. The second phase of the plastic style representing a highly specialized craft production could not take place without the acceptance of new technologies apparent in the metal composition. Bohemia was not the terminal region in the process of diffusion of ideas from the Danube region, which also reached further to the west, up to the present day Germany and France.

#### A14.03: Celtic coinage in Bohemia, 3rd–2nd cent. BC

by **Jiří Militký** (*Institute of Archaeology, Prague, v.v.i., Academy of Sciences of the Czech Republic, Czech Republic*)

There was a substantial re-assessment of the early phase of Celtic coinage in recent years in Bohemia. It is apparent that situation in this area is complex and very much different in comparison with the Amber Route corridor. It is not clear whether gold staters of the Nike type and notably Athena-Alkis emissions were also minted in Bohemia. However, the emissions of the so-called *Nebenreihen* certainly originated there. They comprise gold coins of the same monetary system as Athena-Alkis, but their iconography is quite different. Within some groups, the production of 1/4stater instead of 1/3stater has been recorded. According to new finds, produced at the same time were silver coins – obols iconographically related to gold emissions. Only a small part of these finds were published so far. The

term *Nebenreihen* already lost its justification, and the summary term „local Bohemian emissions“ are more correct. It is not known, though, at which particular localities these emissions were minted. It is possible that these coins indicate the existence of trade and production centres which have not yet been identified in Bohemia. The newly discovered settlement site of Žehuň perhaps may belong to central places of that type.

#### **A14.04: From East to West: distribution zones of some eastern Celtic late La Tène brooches**

by **Maciej Karwowski** (*Institut Archeologii, Uniwersytet Rzeszowski, Poland*)

Research conducted during the last 20 years has led to a significant increase in the number of archaeological finds in Central Europe, including those dating back to the Late Iron Age and related to the settlement of the La Tène culture. The study of these materials shows that many of the categories of artefacts are characteristic of the eastern areas of this culture. These include certain types of fibulae whose distribution zones throughout the La Tène culture clearly indicate their eastern origin.

#### **A14.05: Remains of crops can also tell stories, or archeobotany of Bohemia and Moravia in the La Tène period**

by **Mária Hajnalová** (*Univerzita Konštantína Filozofa, Slovak Republic*), **Petr Kočár** (*Akademie Věd České Republiky, Czech Republic*)

For cultivated crops, the Iron Age is one of the key periods of change. In the Czech Republic it was the switch from "archaic" to "progressive" assortment of crops. Besides the remaining domination of glume wheats (einkorn, emmer, spelt), millet and hulled six- or four-row barley, free-threshing wheats, rye and oat became intentionally cultivated species. Beginnings of these changes correspond to the La Tène period and can be related to changes in agriculture and technology of the time – e.g. establishment of mown grasslands, indicated by the introduction of short-scythe, introduction of rotary quern, etc.

The contribution summarizes present data on the assortment of grown crops in the Czech Republic in the Iron Age, notes chronological and regional differences and compares crops recorded at hilltop and flatland settlements. Also treated are the problems of differences in determinations produced by individual archaeobotanists. Briefly commented are also charcoal collections of the period under study which reflect the state of forest vegetation, and serve as indicator of natural environment in the hinterland of individual sites.

#### **A14.06: Celtic Craftsmanship – From Eastern France to Eastern Austria**

by **Nathalie Ginoux** (*Paris-Sorbonne University, France*), **Peter.C Ramsl** (*Österr. Akademie der Wissenschaften, NHM-Wien, Austria*)

As it is known from many examples, especially in the Early and Middle La Tène periods, many contacts between North-Eastern France and Eastern Austria existed. This is evident especially in handcraft, metalwork skills and practices, and designs, in other words, in the so-called "style" of the artefacts. Therefore, the aim of this paper is to enlighten the very conditions of such contacts and at the same time, the actual meaning of *style*. These questions will be examined, in particular the possible general trends for circulation of ideas as well as artefacts between the two areas, and the existence of related workshops. Mainly weapons and other metalwork will be studied, focusing on the La Tène social elites network mobility, including both warriors and craftsmen.

#### **A14.07: Segestica – A Late Iron Age production and distribution centre of south Pannonia**

by **Ivan Dmić** (*Archaeological Museum in Zagreb, Croatia*)

The settlement around the mouth of the River Kupa became an important centre in the Early Iron Age due to its prominent position at the crossroad between Pannonia, the eastern Adriatic coast, north Italy, southeastern Alps and the Danube. It kept its role as an exchange and production centre also in the Late Iron Age, when the Carpathian Basin became an integral part of the La Tène culture. The archaeological material, primarily metal finds, confirms contacts not only with the neighbouring Mokronog group of the Taurisci, but also with the Vinica group which occupied the area of the upper Kupa river and is ascribed to the historically recognized *Colapiani*. Additionally, several finds point to contacts with the area of southeast Pannonia which was occupied by the Skordisci. Finds of Celtic coins, Roman republican denars and drachmas of Dyrhachium, Roman bronze vessels and matrices used for making jewellery out of silver tin all testify to the fact that this settlement had the role of a distribution and production centre on the supraregional level. The site's exceptional position in the Late Iron Age communication network is confirmed by Latin texts which mention it under the name of *Segestica*.



**A14.08: Late La Tène settlements in Eastern Slavonia (Croatia) – Centres of trade and exchange between Central and South-Eastern Europe**

by **Marko Dizdar** (*Institut za arheologiju, Croatia*)

During the Late La Tène period, the Scordisci in the Eastern Slavonia developed a complex settlement network, which included fortified and lowland settlements. Fortified settlements were always placed in strategically favourable locations and communication routes. They were characterized by a fortification system consisting of an earthen rampart and a wide ditch. In the northern part of Vinkovci at the site Blato, a trial excavation was carried out during which remains of infrastructure of a lowland settlement with abundance of metal and glass finds were documented. These finds suggest that the settlement played a special role in the settlement and communication network and hierarchy of the Scordisci in the Vinkovci area, with intensive commercial and industrial activities similar to those of the somewhat older settlements in Central Europe, e.g. Némčice or Roseldorf. This is a completely new idea in understanding the Late La Tène settlement network of the Scordisci, in which the central position in trade and exchange was supposed to be occupied by the fortified settlements. Obviously, these fortified settlements played a prominent role, but the existence of contemporary lowland settlements like Blato, with numerous finds from distant regions, confirms that the settlement network was even more complex.

**A14.09: East meets West in the Celtic horizon of Transylvania. The case of the cemetery of Fântânele – Dâmbul Popii**

by **Aurel Rustoiu** (*Institute of Archeology and History of Art, Romania*), **Sandor Berecki** (*Mureş County Museum, Romania*)

The analysis of La Tène cemeteries identified in the eastern part of the Carpathian Basin points to a synthesis of Central and Western European elements and of those characterising the local communities. Aside from them, some cultural features originating from eastern Mediterranean and northern Balkans were also adopted, albeit filtered and interpreted in particular manners. The paper is going to discuss the presence of these eastern cultural patterns in the cemetery from Fântânele-Dâmbul Popii, in eastern Transylvania. The cemetery was investigated four decades ago, but it remained largely unpublished. However, this is a representative example of the Celtic horizon from Transylvania, due to the large number of burials. The analysis of the funerary rite, ritual and inventories dated to the LT B2-C1 reveals many interesting features. For example, the community from Fântânele preserved a series of symbolic elements of Central – Western European origin (a resurgence of some older symbols, already abandoned in Central and Western Europe, has been noted in the LT C1), but they were amalgamated with several indigenous symbolic elements. At the same time, some funerary inventories suggest the existence of certain inter-community relationships across a wider area, in which some populations from northern Balkans were also involved.

**A14.10: Celtic, local and from around. Making sense of La Tène culture in the Iron Gates area**

by **Andreea Drăgan** (*Babeş-Bolyai University, Romania*)

For a long time the image of the second Iron Age has been dominated by the La Tène cultural traits, and consequently the Celts. This has played a great role in explaining the second Iron Age also in the area of the Iron Gates of the Danube, where the impression of a 'Celtic world' was already set by ancient authors, however mixed with strong local elements. The other side of the Danube has been largely associated with the Dacians, while the existence here of La Tène material traits was generally not seen as proof of a Celtic population.

As the attention in archaeology shifts from general to individual, the particular association of artefacts specific to La Tène, local and other milieus that characterizes the Iron Gates area, many of these shared across the river, should be stressed. This will be the starting point for reconsidering the importance of local environment in shaping identity in the second Iron Age, particularly the Iron Gates area, in the context of a dynamic period, with increased circulation of people, goods and ideas, and focusing on the determining role of people as active agents in shaping their world.

## POSTER

### A14.01-P-3: Archaeological and historical context of the Kronenhalsringe finds in Eastern Europe

by Larissa Vorotinskaya (State Hermitage, Russian Federation)

The paper concerns finds influenced by the La Tène culture. There exist a number of maps created by several researchers detailing items of Jutland and North German origin, to which new finds are continually being added. These maps show the distribution of *Kugelfibeln*, belt clasps, hearth supports and torque-crowns. Most detailed of all is the spread of torque-crowns known in the literature as *Kronenhalsringe*. The territories of Denmark and Northern Germany constitute the basic zone of their distribution, yet they can also be found in Poland and Romania. The river Desna (Leski, Greblya) attracts particular attention, as here no less than 7 items were found in last 100 years. This coincides with the distribution of finds strongly influenced by the Jastorf culture. Today, the most pressing question is that of the finds of the Chernichinsk group on the River Bug and those of the Khariivki type on the River Seima. The study of these groups will promote a new understanding of the cultural and archaeological situation in Eastern (and Central) Europe in general during the Iron Age.

## Round Table A15

### Far From the Madding Crowd – Interpreting the Ephemeral Evidence for Rural Life

Friday, 6 September 2013, 14:00–18:30

Room: EU 106 (Building 1, ground floor)

**Organisers:** **Martijn van Leusen** (University of Groningen, The Netherlands), **Kayt Armstrong** (University of Groningen, The Netherlands), **Wieke de Neef** (University of Groningen, The Netherlands) and **Andrew Bevan** (UCL Institute of Archaeology, UK)

Problem statement: Landscape archaeologists, and especially those who employ or study field walking, will be aware of the presence of large numbers of small, non-monumental, archaeological sites within the landscapes they study. Interpreting these rural sites is difficult precisely because the evidence is sparse, poorly preserved, and undiagnostic in terms of dating and function. Moreover, theoretical models tend to ignore rural subsistence activities in favour of 'more interesting' central places. As a result, rural sites and rural life in general are frequently neglected in the analysis of landscape-scale datasets; yet in quantitative terms, they make up the large majority of the evidence and of the local patrimony. Because these sites are so ephemeral, a key approach to understanding them involves investigating and mapping the geomorphological and anthropogenic processes that affect their expression at and near the surface. Because the evidence is so dispersed, we need to find a cost-effective balance between invasive (coring, test-pitting, excavation) and non-invasive (intensive field walking, geophysics, remote sensing) methods.

The aim of this round table: To bring together diverse projects and researchers that study such ephemeral rural landscapes, to present and discuss models, approaches, problems and solutions to the interdisciplinary study that seems required to understand both past rural landscapes and current processes operating on the rural archaeological record. We will work towards a joint document describing the current state of research into ephemeral rural landscapes, and towards a common research agenda which may form the basis for future EU-funded studies.

Invitation: We want this to be a diverse round table in terms of techniques, regions and periods, drawn together by the common problem of studying and interpreting ephemeral rural sites. We believe the problem is widespread but 'invisible' because it is not often the main focus of research, and we therefore invite you to contribute your experience and ideas!

#### A15.01: Round Table Introduction

by **Martijn Van Leusen** (University of Groningen, The Netherlands), **Kayt Armstrong** (University of Groningen, The Netherlands), **Wieke De Neef** (University of Groningen, The Netherlands)

The purpose of this roundtable introduction is to set out the main problems and goals to be discussed, using examples taken from the University of Groningen 'Hidden Landscapes' and 'Rural Life' Projects in Northern Calabria 2006-2013. The roundtable participants will be canvassed during the summer to establish points for a joint research agenda, but in any case the following issues will be broached: 1) models for rural lifeways and their archaeological correlates, 2) taphonomic and postdepositional processes affecting the preservation and visibility of remains, 3) field methodologies for detecting and mapping ephemeral rural remains, and 4) interpretation of the remains in the light of the models mentioned under 1.

#### A15.02: The excavation of a hunting thicket in Roissy (France)

by **Jean-Yves Dufour** (INRAP, France)

In Roissy (18 km from Paris), an archaeological excavation found a curious concentration of archaeological structures related to agricultural and landscape history. In total, 46 ditches and 150 small holes are concentrated on a surface of about an acre. The dating and the spatial organisation of these structures lead to their interpretation as a *thicket*; a small post mediaeval hunting reserve. Close reading of the descriptions given in the old agricultural manuals assist us in a detailed reading of the discoveries.

The association of vineyard, coppice, meadow and drinking water clearly shows the care taken by the post-medieval rural aristocracy to provide habitats attractive to small game.

The sharp tensions around hunting in Ile-de-France in modern times are focussed on the lords' thickets which are considered by the farmers to be a nuisance.

The increasing size of fields, an indifference to biodiversity and certain ignorance led to the loss of the thickets which had been both characteristic of the pleasures of hunting and an integral part of the cornfield landscape.

### **A15.03: Minor and off-sites: the Pisa South Picenum Project (The Marches, Italy)**

by *Simonetta Menchelli* (University of Pisa, Italy), *Marinella Pasquinucci* (University of Pisa, Italy)

This project studies the territory of *Firmum Picenum* (Latin colony, 264 BC). An area of about 145 km<sup>2</sup> has been intensively surveyed with high visibility and 780 topographic units were identified (330 classified as sites, 450 off-sites). We documented 211 major sites (the main town and its port; *vici*; *mansiones*; villas; farmsteads; villas/farmsteads; kilns/amphora storage sites) and 219 minor and off-sites dated from the 2nd cent. BC to the 7th cent. AD.

The classification of minor- and off-sites was based both on the artefacts and on the depositional and post-depositional factors that caused their distribution. Moreover, criteria have been established to identify different kinds of minor- and off-sites, as Roman technical, literary, epigraphic and iconographic sources provide a relevant contribution to the Mediterranean economies, rural activities and daily life and more specifically to the *Picenum* ones, some historical and functional classes of minor sites can be identified. On such a basis, in the *ager Firmanus* we are able to distinguish a few classes of minor sites connected with a range of economic, social and religious activities (e.g. small independent farmsteads connected with the Colonization process in the 3rd-2nd cent. BC; outbuildings of the Imperial large villas; pastoral sites; cult places).

### **A15.04: The detection of rural activity patterns through intensive archaeological survey. Some experiences from south-west Iberia**

by *Luis Sevillano Perea* (Merida Institute of Archaeology, Spanish Research Council (CSIC), Spain), *Victorino Mayoral Herrera* (Merida Institute of Archaeology, Spanish Research Council (CSIC), Spain)

The rural hinterland of complex archaeological sites present a challenging palimpsest of surface evidence, resulting from a long history of agrarian exploitation. These material entities correspond to a wide range of cultural and social practices, from the network of rural settlements to the more ephemeral evidence of small activity areas and land use.

Nevertheless, the scale and rhythm of this evolution has not been homogeneous. In the most productive areas of the alluvial plains we find the aggregation of a continuous human presence from Prehistory. But far from these densely populated areas we find much more scarce and puzzling evidence. Here we detect only particular periods of more intensive farming activity. Within these dense carpets it is difficult to individualize particular processes and to define the real entity of specific episodes of agrarian history.

Our aim in this paper is to explore this realm of the more subtle forms of rural life by testing different archaeological intensive survey methods. We are also concerned with the issue of how this archaeological heritage can be protected, considering the huge impact of present agricultural exploitation. We take as a case study the historical site of Medellín (Badajoz, Spain) and its surrounding territory.

### **A15.05: The intersection of theory and practice in “marginal” mountainous landscapes: the investigation of past human-environment interactions in the southwestern Alps**

by *Kevin Walsh* (University of York, UK), *Francesco Carrer* (University of York, UK), *Florence Mocci* (CNRS, France)

Fieldwork in the southwestern European Alps aims to understand the changing nature of Holocene activity at high altitude zone (above 2000m). The investigation of each valley begins with prospection. “Normal” fieldwalking protocols can not be applied in this topography, so consequently, prospected areas are chosen based on intuition i.e. zones where activity is possible given the constraints of the landscape. One important theme in our research is the assessment of resilience and persistence in the use of alpine spaces within an historical ecological framework.

After prospection; excavation, palynological and anthracological work is undertaken. Whilst these approaches permit the articulation of general inferences regarding past human-environment interactions, ethnoarchaeological research provides a richer assessment of human practices. This focuses on recent seasonal structures, and interviews with their users, with a view to understanding similar ancient structures and landscape use.

These combined approaches should permit the development of lucid human ecological histories, where equal emphasis is placed on assessing human relationships with landscape and environment over time. In this contribution we will consider our approaches to prospection, excavation and palaeoenvironmental work, and the combination of this with ethnoarchaeology, with a view to emphasizing the evolution of environmental knowledge in this enigmatic landscape.

#### **A15.06: Laying bare the landscape: large-scale rural archaeology in the upper Thames valley, England**

by **Roger M Thomas** (*English Heritage, UK*), **Chris Gosden** (*University of Oxford, UK*), **Morrison Wendy** (*University of Oxford, UK*)

The upper Thames valley is rich in the 'non-monumental' remains of rural communities, especially of the Iron Age and Romano-British periods: open and enclosed settlements, trackways, field boundaries and other modest features. Huge areas of this landscape have now been investigated very thoroughly, mainly in advance of gravel quarrying. A range of techniques has been applied: aerial photographic plotting and interpretation, geophysical survey, trial ('diagnostic') trenching and open area excavation. On excavation, the remains are often found to be poorly-preserved, and sometimes produce little in the way of artefacts or environmental evidence. Nonetheless, the sheer spatial extent of this evidence is extraordinary: some 20 square kilometres have been examined in detail.

A current University of Oxford project is gathering together and integrating results from multiple investigations, using GIS to map and analyse this landscape. In our paper, we will consider the potential of evidence on this scale, and how it can help us to understand the functioning and history of these 'ordinary' agricultural communities – communities which were the foundation of society in these periods. We will explore the value of an 'archaeology of the ordinary', the methodologies used for investigating it so far, and how best to approach this subject in the future

#### **A15.07: Developing interpretative frameworks for ephemeral artifact scatters: a geoinformatic example from central Turkey**

by **James Newhard** (*College of Charleston, USA*)

Assigning function to small, ephemeral distributions of artifacts in the landscape is a time-worn problem within landscape archaeology. Often, these features are intuitively assigned functional attributes based upon size or the presence of a particular class of artifacts. To date, a means to more strenuously ascribe functional attributes has not received wide acceptance.

Work by the Avkat Archaeological Project, an intensive survey in central Turkey, has developed a means to explicitly describe, evaluate, and assess functional aspects of features found within the landscape. The study incorporates textual comparison, site size, artifact types, and geographic data within a measurable geospatial framework to enact a comparison of feature characteristics against explicitly stated assumptions for site function. The approach enables explicitness in stating assumed functional characteristics while preserving the sparse nature of the recovered evidence. Cached within a modeling environment, the method allows for an approach where assigning functional criteria can be altered based upon changing understandings of the society in question.

#### **A15.08: Uncertainty and persistence: rural signatures and archaeological survey**

by **Andrew Bevan** (*University College London, UK*)

This paper considers several related features of rural life and the way archaeologists seek to understand them via landscape survey. It first explores how best to grapple with the inevitable uncertainty that accompanies our study of past landscape activity. There is considerable variability in the degree to which we can assign sizes, shapes, dates and behavioural functions to the archaeological residues we observe, and the sheer number of rural sites often defies consistent treatment in depth (e.g. via combined surface survey, geophysics and excavation). This inevitably means we must work with partial datasets of uneven diagnostic value. In the light of these challenges, this paper stresses the need for multi-stage projects, permanent artefact collections and probabilistic approaches to quantifying our present state of knowledge. A second step demands that we integrate the assessment of much better-preserved recent periods of rural life into our comparative archaeologies of earlier periods in ways that do not render the former so wholly exceptional. Finally, we need to understand which aspects of rural life reflect repeated, convergent responses to local landscapes, which ones involve historically-specific solutions, and/or which ones mark the gradual consolidation of certain well-known places.

#### **A15.09: Middle age settlement in the Cantal volcanic massif**

by **Frederic Surmely** (GEOLAB, France)

As part of a general archaeological project (2000–2013) lead in the southern part of the Cantal volcanic massif, we discovered many sites and structures dated from the middle part of the middle ages. Two main types of settlement can be distinguished : hamlets and isolated farms. They sites are situated below 1285 m a.s.l. They are linked to permanent settlement based on an agropastoral economy as the pollen and seed evidences of grazing and arable farming suggest. The houses were adapted to the cold environment, they were half buried and had frequently a long and curved entrance corridor.

#### **POSTER**

#### **A15.01-P-4: Agrarian land-plots in the environs of Chersonesos and Metapontion**

by **Barbora Gavřáková** (Charles University, Czech Republic)

This poster deals with the system of land-plots in the surroundings of two Greek colonies: Chersonesos and Metapontion. These two colonies are rare and well-preserved examples where it is possible to study the phenomenon of the ancient Greek *polis* and its *chora*, which forms the agricultural hinterland of a *polis*. In case of Chersonesos and Metapontion, this was also the source of their wealth and fame. The surroundings of these two *poleis* were covered by dense net of plots of unified size and measurement, probably using one single module as the basis. We can compare these two systems from many points of view. On one hand there are many similarities in the size of individual lots and the plotting themselves but from the other hand these two systems have been very different. The major difference can be seen in the fact that the *chora* of Metapontion seems to be settled year-round unlike to the one in Chersonesos. The strongest evidence for this statement is the presence of multitude rural necropoleis directly in the area of its *chora* and the so called 'rural sanctuaries' which have not been found in the *chora* of Chersonesos, yet.

## Session A16

### Fortified settlements of the 7th–10th centuries AD in different regions of Europe

Thursday, 5 September 2013, 08:30–18:30

Room: EU 104 (Building 1, ground floor)

Organisers: **Hajnalka Herold** (University of Vienna, Austria) and **K. Patrick Fazioli** (Medaille College, USA)

This session aims at comparing the archaeology of fortified settlements in different parts of Europe. By analysing the origins, forms, functions and symbolic meaning of these settlements, similarities and differences will be discussed in the development of European regions in the late phase of the early Middle Ages. Were fortified sites typical in the early Middle Ages? When, where and why did they emerge? Who controlled these sites? What can we say about the structure of the defences? How was the space divided within the fortification? Were the inhabitants of these sites directly engaged in agriculture or did they rely on receiving agricultural products from neighbouring unfortified sites? What kind of craft production took place at these sites? What do the small finds tell us about their inhabitants? And finally, are there regions where power centres of the early Middle Ages were unfortified?

#### A16.01: Centres of power? Fortified settlements of the early Middle Ages in central Europe

by **Hajnalka Herold** (University of Vienna, Austria)

Fortified settlements were important centres in the later phases of the central European early Middle Ages (9th–10th centuries AD). Their study therefore constitutes an essential part of early medieval archaeology in this region. This paper examines fortifications located in contemporary Austria, Hungary, Czech Republic and Slovakia. The intensification of settlement activity and the emergence of fortified sites in this region indicate basic changes in the political, economic and social history of the area around the beginning of the 9th century, as well as multiple transformations during the following two centuries. The region under study was situated on the south-eastern border of the Carolingian (and later the Ottonian) Empire, with some of the discussed sites lying in the territory of the 'Great Moravian Empire' in the 9th and 10th centuries. These sites can therefore provide important comparative data for researchers working in other parts of the Carolingian Empire and neighbouring regions.

#### A16.02: Late Antique and Early Medieval Upland Fortified Settlements in the Southeastern Alps: Recent Discoveries and Future Directions

by **K. Patrick Fazioli** (Medaille College, USA)

This paper surveys the current state of archaeological research on Late Roman and Early Medieval upland fortified settlements (UFS) in the southeastern Alpine region – what is today Slovenia, southern Austria, and northeastern Italy. Once considered simply places of refuge for local communities during the tumultuous post-Roman period, scholars now recognize a much greater functional diversity among UFS, from small military garrisons to expansive ecclesiastical complexes. As the most prevalent settlement type during Late Antiquity, UFS are crucial for understanding the enigmatic transition from the classical to medieval worlds in this region of Central Europe. This paper presents some significant recent discoveries and developments in the archaeology of UFS, focusing particularly on questions of continuity and change in terms of technology, identity, and religion. Finally, some potentially fruitful directions for future research are outlined.

#### A16.03: Early Medieval Fortified Settlements and the Process of Urbanisation in East Central Europe

by **Jiří Macháček** (Masaryk University, Czech Republic)

This conference paper will discuss early medieval urbanisation in East Central Europe. This is understood as the process of the population's concentration in (proto)urban agglomerations, which fulfilled important central functions within the settlement structure while their economy was not primarily based on agricultural production. The first issue that will be addressed is to what extent the early medieval fortified settlements in East Central Europe comply with the criteria for (proto)urban centres. Next, the attention will be focused on the continuity and discontinuity of their development, the causes of their emergence and decline, the issues of translation and diversification. Theoretical conclusions will be supported by case studies from within the territory of the so-called Great Moravia from where we know the best explored sites of the type under discussion.

The broad time perspective of our study, covering a period from the 6<sup>th</sup> to the beginning of the 13<sup>th</sup> century, allows us to better capture the diachronous processes which shaped the settlement structure in East Central Europe at the start

of the Middle Ages. The synchronous approach will be based on searching for structural similarities in the urbanisation processes taking place in other societies on a comparable level of social complexity.

#### **A16.04: The oldest Hill-forts from Bohemia (8th – 8/9th century AD)**

by Nada Profantová (Institute of Archaeology AS CR, Prague, Czech Republic)

There are 8–12 hillforts, which could be dated to the oldest horizon of hill-fort period in Bohemia. We could find them mostly in Middle Bohemia, in Northwestern Bohemia, in Eastern Bohemia(1). They are quite small (to 2 ha), but also large (Tismice). Some of them are in regional groups, the most important the groups are in Middle Bohemia (Klučov, Douravčice, Tismice) and in the Prague basin (Praha –Bohnice, Šárka). The rampart consist of wooden-earth construction, before the wall is a ditch. They are two exception – their fortification is fill in/complete with the stone wall (Kal). The main constructions were the pit houses (Klučov), sometimes also quite large post construction (Doubravčice). Important are finds of coins of Charlemagne, cast bronze belt-mounts from the late Avar Period, finds of spurs with hooks dated to the 8<sup>th</sup> century. The evidence of metal casting are documented in Doubravčice, 2 cast of color metals, a bronze die for press mounts from horse harness (Tismice). In 8/9. century were destroyed two of the hill-forts: Kal and Doubravčice. Kal seems to clearly corroborate act violent destruction of the hill-fort that was probably caused by conquest of army composed largely of Avar warriors.

#### **A16.05: Archaeological research on fortified centres of the Early Medieval Bohemia**

by Jan Mařík (Institute of Archaeology of the ASCR, Prague, v. v. i., Czech Republic)

Beginnings of systematic archaeological research on the Early Medieval fortified centres can be traced back to the first decades of the 20<sup>th</sup> century. Phenomenon of the fortified centres and their significant emergence is considerably coincident with the establishment of the Czech Early Medieval state and it has attracted the attention of archaeologists as well as historians who often rely too non-critically on archaeological sources. Moreover, dramatic political changes that happened in Bohemia in the course of the 20<sup>th</sup> century also distinctly influenced the Early Medieval centre studies.

All the above-mentioned factors crucially influenced conceptions and aims of the research on the Early Middle Ages such as formation of the feudal system, emergence and spreading of Christianity, establishment of the Czech state etc. Political interest in this significant period of Czech history was manifested mainly in the second part of the 20<sup>th</sup> century in the strong state support of extensive archaeological field works that, however, often remained, until these days, without any evaluation. This paper focuses on a comprehensive overview of development of archaeological research with the emphasis on critical evaluation of the well-established interpretive models and transformation of methods applied on archaeological research

#### **A16.06: Nodal points of social life? Functions of fortified settlements in Early Medieval Bohemia**

by Ivo Stefan (Charles University, Faculty of Arts, Czech Republic)

During the Early Medieval period tens of fortified settlements emerged in Bohemia. In many cases they represent major public works requiring huge energetic investition and cooperation which demands quite high complexity of society. The paper is focused on defining their functions on the basis of archeological and written evidence. Were they just fortresses and residences of elites or did they fulfill other social functions as well?

#### **A16.07: Fortified 'settlements'? Looking for the infrastructures of the early medieval slave trade**

by Marek Jankowiak (University of Oxford, UK)

My paper will start from the observation that the massive inflow of Islamic silver to Scandinavia and the Slavic lands between ca 800 and 950 is probably best explained by a long-distance trade system dealing in furs and slaves. Given that evidence for a massive production of the former is limited to Northern Russia, the hypothesis of the predominance of slaves in the exportations from Central Europe is worth exploring. Recent work on other slave trade systems suggested methods for identifying their archaeological correlates. I would like to pursue a similar line of reasoning in relation to Central Europe, looking in particular at the varying characteristics of the hillforts, the evidence for changes in settlement density, and the distribution of dirham hoards. Can this evidence be used to support or disprove the hypothesis of a large-scale slave trade in Central Europe in the 9<sup>th</sup> and 10<sup>th</sup> centuries? Could hillforts have played a role in the logistics of the slave trade? How to explain their diversity? The recent increase in the resolution of the chronology of hillforts enables new answers to these questions.



#### **A16.08: Archaeological and historical evidence on Izborsk, the legendary capital of Truvor**

by **Nikolay Lopatin** (*Institute of Archaeology, Russian Academy of Sciences, Russian Federation*)

According to the Russian chronicle, Izborsk is one of the three oldest centres of Northern Russia, the capitals of three Varyag brothers, who were invited to rule by native tribes in 862. Many scholars believe this data to be close to the truth. Archaeology shows that in 9th century Izborsk was a centre of a region, but facts reject the possibility of Izborsk being the capital of Truvor. There should have been a heavy reason for the Russian chronist to give Izborsk the outstanding role in early Russian history. So we must search the written and archaeological evidence to find this reason out. The region of Izborsk is known as the western border of NovgorodLand. The Novgorodian princes organized numerous military campaigns against their western neighbours – the Chud' tribes, and the fortress of Izborsk was situated at the very border and simultaneously on the road from Novgorod to the West. The first action took place in 1030 (by Yaroslav the Wise). Archaeological materials show that at this time the fortifications of Izborsk were rebuilt. A special court of 2000 m<sup>2</sup> with wooden wall was established within the fortress.

#### **A16.09: Early-medieval D-shape fortifications in the Schelde and Meuse Valley, with special attention to the cases of Antwerp and Ghent**

by **Dries Tys** (*Brussels Free University VUB, Belgium*), **Tim Bellens** (*City of Antwerp, Belgium*), **Daan Celis** (*Belgium*)

During the 9<sup>th</sup> and early 10<sup>th</sup> century D-shape fortifications were erected in and around early urban settlements and settlements with trade activities in the valleys of the Schelde and the Meuse in present Belgium. In this paper we will explore the cultural and material biographies of these D-shape fortifications in their social context. We will look at archaeological evidence concerning the fortifications themselves as well as to the human activities within the settlements as suggested by the archaeological data. The cases of Ghent and Antwerp, where recent excavations have delivered new data, offer interesting discussions concerning the role and context of these D-shape fortifications. In both cases there are clear links to Scandinavian military presence, indicating possibly even Scandinavian origins of the ramparts as well as the trade settlements themselves. In this respect, the silence of the written sources concerning these towns during the 9<sup>th</sup> century could indicate that these centres were not under official control. In Antwerp, the earthen rampart was rebuilt in stone in the early 11<sup>th</sup> century, probably in the context of the symbolic redesign of the centre when Ottonian powers took control.

#### **A16.10: Early Medieval Strongholds in South Poland as an Expression of Change within Early Slav Society**

by **Przemysław Sikora** (*Independent researcher, Turkey*)

Archaeological sources from the second half of the 7th century reveal dramatic developments in Slav culture. In particular, this development manifested itself in the stabilization of Slavic settlement patterns, in the structure of early Slavic villages, and in agriculture. This led to the emergence of central places of trade, production, cult, political and military power. Simultaneously, it also led to the development of a stratified structure within the society. The first finds which emphasize the prestige of one group or even one person date to this time. The appearance of the first Slavic strongholds at the end of the 8<sup>th</sup> century could be considered an expression of this development. These structures probably formed the central point of small territorial units.

Apart from their political, military and symbolic function, the strongholds are an expression of the mobilization of the workforce, which indicates the existence of some kind of organization of the local society. Furthermore, the strongholds indicate the presence of a stable economy, as well as technical knowledge. Thus the primary questions should be: Why did the Slavs' need for big, technically complex earth constructions emerge, and, consequently, do the functions of these strongholds vary from region to region?

#### **A16.11: Strongholds from 8th – 10th cent. from the territory of Poland, Czech Republic and Slovakia. Similarities and differences – signs of regional differentiation?**

by **Michał Wojenka** (*Jagiellonian University, Poland*)

Early mediaeval strongholds from the territories of present-day Poland, Czech Republic and Slovakia are known for more than 700 examples. During the period of 8<sup>th</sup>–10<sup>th</sup> centuries these lands were not equally filled with fortified sites. The western part of Poland, i.e. northern parts of Silesia, Greater Poland and Pomerania demonstrate an abundance of strongholds dated to the 8<sup>th</sup>–10<sup>th</sup> cent. The fortified sites from these territories are usually very small and single shaped.

The characteristics of the strongholds situated on the southern part of Poland, in Slovakia and Czech Republic is different. These territories are determined by the appearance of big and very big strongholds, which area in many cases

exceeds 10 hectares. Its size usually corresponds with typology. Most of the biggest strongholds consists at least on two parts.

The diversity of strongholds may correspond with regional differentiation of the lands of present-day Poland, Czech Republic and Slovakia in the period of 8<sup>th</sup>–10<sup>th</sup> cent. The presence of big strongholds in many cases reflects remains of the defensive system of Moravian and Early Czech State. It cannot be excluded, that the appearance of big strongholds (over 10 hectares) in south-eastern Poland reflects some influences coming from south.

#### **A16.12: The fortified 9th century hilltop site in Bojna and its surroundings.**

by **Zbigniew Robak** (*Slovak Academy of Sciences, Slovak Republic*), **Karol Pieta** (*Slovak Academy of Sciences, Slovak Republic*)

The paper discusses the role of the hillfort Bojná I in the system 9<sup>th</sup> century of Moravian centres of power.

The hillfort Bojná I is located on the western Slovakia, near Nitra. This 12 ha stronghold is located on an inaccessible hill and its primeval size can be attested by ramparts preserved to the height of 8 m. Currently, based on the radiocarbon data obtained from the rampart, the stronghold is dated back to the late 9<sup>th</sup> century; however it is highly probable that the rampart had also an older phase.

During 5 seasons of regular archaeological researches we have obtained an enormous number of relics, including over 300 items related to the elite equestrians culture as well as attire of warriors, including primarily strap fittings and spurs. At the hillfort there are also preserved traces of an intense craft production, especially blacksmithing. What is interesting, despite thousands of relics testifying to the intense exploitation of the hillfort the cultural layer is very thin and only few items could be linked with female attire.

So far, despite intense searches at the stronghold and in its vicinity no cemetery associated with it has been found, except two burial mounds.

#### **A16.13: Prague Castle. Changes of spatial area during 9th and 10th centuries**

by **Josef Matišek** (*Institute of Archeology of Academy of Sciences of the Czech Republic, Czech Republic*)

This thesis follows up changes of spatial area of the Prague Castle, that take in transition period from the archaic period (9th century) to the early Přemyslid era. The changes are studied on the basis of archaeological researchs and early mediaeval literary sources.

#### **A16.14: Byzantine fortified settlement on Lower Danube – Capidava, Romania**

by **Ioan Marian Tiplic** (*“Lucian Blaga” University, Romania*)

The fortified settlement on Lower Danube appears at the end of 9th century during the campaign of Byzantine Empire against the Bulgar Tzardom. Between end of 9th century until the end of 11th the connections of the Danube Dobroudja settlements with Balkan region of the Byzant were controlled by the Bulgarians.

Capidava had been a roman military camp during the 1st until 4th century AD and after that became a fortified byzantine settlements with a very important role in defense the Danube frontier and also a very important role in the commercial route from Black Sea coast to inner territories of western and northern Lower Danube.

The archaeological excavations which are made more than 90 years shows that during 7th until 9th century the settlements was abandoned and at the end of 9th century a new settlements was established in front of the main gate of former fortified byzantine settlement.

The archaeological material proves the existence of good connection with the Balkan region of the Byzance and also with southern and northern regions of Lower Danube.

#### **A16.15: Slon fortifications and power centres in the Lower Danube between the eighth and tenth centuries**

by **Bogdan Ciupercă** (*Prahova District Museum of History and Archaeology, Romania*), **Andrei Măgureanu** (*Vasile Pârvan Institute of Archaeology of the Romanian Academy, Romania*), **Anton Alin** (*Prahova District Museum of History and Archaeology, Romania*)

In this paper we will reconsider some problems regarding the presence of Slon's fortifications in the context of the Bulgarian domination on the Lower Danube and inside the Carpathian Arch.

Slon fortifications is located on a plateau north-west of the actual village bearing the same name. The earliest one is a stockade, built from wooden trunks burrowed vertically into the ground and was dated between the end of the 8th century to the beginning of the 9th century. The second fortification, located very near the first, was built from mortar-connected bricks. Based on small finds and some analogies with the Sarkel fortress it has been dated to the middle of the ninth century. The third one was used from the second half of the 9th century into the first decades of the following century.

The Slon fortifications lie on an old road, with both strategic and commercial implications, connecting Transylvania with the Danube used until 19th century. After Slon's fortifications were abandoned the ongoing importance of this road was underscored by the erection, 20 km to the north, of the Hungarian stronghold at Tabla Buții, built in the 14th century.

#### **A16.16: Fortified settlements – cultural landscape in the making. Djuteza/Qytëtëze, obs Tuzi, Montenegro – a case study**

by **Maciej Trzecicki** (Institute of Archaeology and Ethnology Polish Academy of Sciences, Poland), **Zbigniew Polak** (Institute of Archaeology, Warsaw University, Poland)

Fortified settlements became a lasting element of the European landscapes at the beginning of the Middle Ages. The Late Antique *refugia* symbolically designate the end of the era of *pax romana*. In the complex political and ethnic situation of Southern Europe – zone of political confrontation and cultural interaction between Byzantine Empire and expansive Slavic kingdoms – emergence of fortified places had both military and symbolic meaning. While many of these sites have developed into centers that are still lively today, some of them have irrevocably lost their significance, keeping some of the traces of the former glory in the cultural memory of contemporary communities.

Djuteza (Albanian: Qytëtëze, “small town”), a stronghold dated from the Early Iron Age until the Slavic princedoms of Duklja/Zeta constitutes one of the main focuses of the multidisciplinary project on cultural landscape developed in recent years in Dinoša, obč. Tuzi, Montenegro. As such, Djuteza is much more than an archaeological site. It's a key element of the cultural memory landscape, for it reflects the living synthesis of people and place. It triggers questions of how the memory of place is being preserved and transformed. How the past is present in the perception of cultural landscape.

#### **A16.17: Byzantine fortifications on Crete – new data**

by **Vera Klontza-Jaklova** (Masaryk University, Czech Republic)

Last years were processed many new excavations on Early Byzantine sites. Our knowledge about Late Roman and Early Byzantine period is much better than 20 years ago. However, the horizon of 8th – 12th Century AD is almost unknown. No one excavation was fully published and there were not many settlements even recognized. Also historical sources are very poor. Stratigraphy of known coastal settlement usually finish by half of 8th Century AD. It looks as though the Arabs controlled only the coastal zone and didn't create their own network of administrative centres, except for Heraklion, and the local population moved inland. One part of our project (Prinistikos Pyrgos) is devoted to looking for the sites of this horizon, even though we have had to start without detailed knowledge of the pottery or the likely locations. However our efforts have already yielded their first results and they some new localities have been identified. These are in the mountains in highly defensible locations – and, indeed, on some very special spots. Sometimes they are on the same hill as Minoan Peak Sanctuaries and LM IIIC defensible sites. The paper presents some of those newly discovered sites, their topography and methodology of survey.

#### **POSTER**

##### **A16.01-P-3: Interdisciplinary research of Early Medieval fortified settlements in Central Bohemia**

by **Ivo Stefan** (Charles University, Faculty of Arts, Czech Republic)

Presentation of the part of the project called "Archeology of Přemyslid Bohemia" focused on research of Early Medieval fortified settlements in Bohemia. The poster will present the new results of interdisciplinary approaches.

## Session A17

### Garbage and (Non)humans

Friday, 6 September 2013, 14:00–18:30

Room: UP 115 (Building 2, ground floor)

**Organisers:** **Daniel Sosna** (University of West Bohemia in Pilsen, Czech Republic), **Lenka Brunclíková** (University of West Bohemia in Pilsen, Czech Republic) and **David Henig** (University of Kent, UK)

For archaeology, garbage represents one of the most viable links between the present and the past. The strength of this link stems from the fact that humans always produce material waste, this waste is almost ubiquitous, and carries rich information about social life. Therefore, garbage of different age located in various places can be approached with a similar methodology to elucidate the life of humans. Since Rathje's classic garbological studies, however, theoretical positions have diversified. Garbage became not only source of information about human behavior but also meaningful action, agency, global condition, materiality, or 'life of things' themselves. While some archaeologists have been moving away from artifacts or things to texts, social geographers and anthropologists have been moving in the opposite direction discovering the potential of materiality and things for understanding humans and emerging forms of life, sociality, and humanity. At the same time, the development of methods in natural sciences and the enhancement of technologies reinforced the strength of archaeology to generate new kinds of data and ask new questions.

This session invites papers that approach garbage as an invaluable resource for understanding human societies and their relationship to things both in the past and the present. We welcome wide range of contributions including theory, garbology of contemporary societies, studies of archaeological garbage, and non-archaeological views on garbage.

#### **A17.01: Social Dimension of Household Waste**

by **Lenka Brunclíková** (University of West Bohemia in Pilsen, Czech Republic), **Daniel Sosna** (University of West Bohemia in Pilsen, Czech Republic)

Since 1989 the post-socialist space passed through significant political, economic, and social changes. These changes are also reflected in the sphere of consumption in both the urban and the rural milieu. This paper is part of larger project and presents the results of a garbological research that took advantage of household waste from two areas of the Pilsen region in the Czech Republic. The first area is represented by an urban site, the second area by a rural site. Through the study of household waste we aim at revealing distinct lived experience of actors, consumption patterns, and their embodied relationship with material things. The main research questions focus on commodity branding, preference of domestic vs. foreign products, taste preferences, and food wasting. The research was conducted at the landfill where the household waste was sorted, classified, and described in detail using a tablet. For sampling a modified method of quartering was applied. Gaining detailed information we aim at connecting household waste with its social dimension, and elucidating spatial aspects of consumption. Although this study is in progress, we aspire to demonstrate that the study of household waste can be used successfully to expand our knowledge of the contemporary society.

#### **A17.02: One man's trash: How the excavation of Copenhagen's moat is revealing valuable information about the city's 17th century population.**

by **Ed Lyne** (Museum of Copenhagen, Denmark), **Hanna Dahlström** (Museum of Copenhagen, Denmark), **Camilla Haarby Hansen** (Museum of Copenhagen, Denmark)

At the behest of King Frederick III, large parts of Copenhagen's city moat were deliberately filled up in the late 1600s, in tandem with the establishment of a new, larger and more modern set of defences. As a result of this relatively brief act of deconstruction, the artefact-rich layers of material recently excavated at Rådhuspladsen (the Townhall Square) in truth tell us little about the moat itself, with the exception of a few primary deposits which date to the late medieval period. Conversely however, these deposits speak volumes about the consumerist, colonialist society developing within the city in the seventeenth century. Waste was taken from across the urban landscape to fill up the moat as quickly as possible – and has been well preserved in the waterlogged conditions within the former moat ever since. This material, if interpreted correctly, can greatly increase our knowledge of everyday life in the growing city. In this paper we will seek to examine what this material says about Copenhageners in the 1600s – who they were, who they wanted to be, and where they fitted in Danish and European society of the time.

### **A17.03: Urban Refuse, what a waste!**

by Lene Høst-Madsen (*Museum of Copenhagen, Denmark*)

How can an archaeological approach to the 18<sup>th</sup> century refuse dumps in Copenhagen add new important knowledge to the established research agenda and tell us more about life in the city?

This is the overall question this paper is revolves around. The work is based on results from large scale excavations of refuse dumps on sites in Copenhagen. The material is extremely rich and well preserved and forms a very strong archaeological source material regarding urban material culture in Copenhagen. Well preserved leather, textile, hair, plant parts and other organic components supplement metalwork, composite artifacts and the common ceramic material. Put into a national and international context these materials possess a unique possibility for working with material culture in and out of context.

This paper reflects on possible research strategies to get more information out of the archaeological refuse material, so that the knowledge we already have from written and iconographic sources, regarding people living in the city, can be refined.

The possibilities and potentials of different theoretical approaches to the material – from the Positivist documentation – to the Processual measuring and the Post Processual approach are discussed. And a suggestion for a future research agenda is put forward.

### **A17.04: Only garbage? Deducing meaning from the Late Bronze Age “ashmounds” of the Carpathian Basin**

by Laura Dietrich (*German Archaeological Institute, Germany*)

My paper explores the possibilities of reconstructing social economic behaviour through a detailed analysis of the so-called “ashmounds” of the Late Bronze Age Noua-Sabatinovka-Cologeni cultural complex. The round heaps formed of greyish sediments are distributed mostly in the Eastern Carpathian Basin and until recently were believed to represent the remains of burned houses or burned waste.

New evidence shows that the “ashmounds” are not randomly formed mounds of waste, but special, collectively used places at the boundaries of settlements; they are not piled on the walking level, but in intentionally dug basins. Chemical analyses prove the sediment to be constituted not of ash, but of a mixture of earth and burned lime. This mixture is ethnographically known to have been used for departing hair from hides. Tools for the scraping of hides, needles, awls and a considerable amount of animal bones give further proof to an intense production of leather. After using one of these activity zones for a while, it was intentionally filled and marked through depositions of bronze objects or animal skulls. A close-up inspection thus shows the simple garbage heaps to be a major source for inferring a large-scale production of archaeologically largely invisible Bronze Age commodities.

### **A17.05: Urbanization as the motor of innovative sanitation policy?**

by Roos van Oosten (*Leiden University, The Netherlands*)

Thousands of cesspits have been excavated in the Low Countries during the past decades. A case study of in total a thousand cesspits from six different towns dating from the 13<sup>th</sup> to the 19<sup>th</sup> century shows that the distribution of cesspits varies strongly from town to town. The main question is whether this difference can be explained through the degree of urbanization.

The presentation will focus on the sharp contrast between 17<sup>th</sup> century Haarlem and Leiden. From the 1580's onward both towns welcomed thousands of migrants from the Southern Netherlands and this influx of skilled workers contributed to an explosive economic growth. The similarities in economic setting did not however result in similar sanitation policies. Where in Haarlem the enormous population rise is perfectly reflected in the increase of the number of cesspits, in the larger town Leiden, the opposite occurred: the number of cesspits dropped dramatically. Archaeological evidence clearly shows that thereafter privies drained directly into the canals.

For conservative and/or economic reasons the local government of Haarlem safeguarded the medieval ‘civilized’ cesspits. In those days Leiden not only lacked a beer industry of any real importance it also grew faster, which required a more adaptive sanitation policy.

#### **A17.06: Waste disposal habits (garbology) in Mediaeval and Post-Mediaeval towns in Bohemia. Cesspits case study.**

by **Gabriela Blažková** (Institut of Archaeology of Academy of Sciences of the Czech Republic, Czech Republic), **Kristýna Matějková** (Independent Researcher, Czech Republic)

Cesspits are common objects revealed during an archaeological excavation in the urban areas. With every excavated cesspit is gained a lot of waste material, especially the pottery. The more archaeological material is processed, the more questions appear.

In this report we try to address some of these questions: if there are some usual habits of filling cesspits in relation to specific location within the plot; if the capacity or construction played an important role and if we are able to learn more about people who used them. We can also find out through the content of these cesspits, whether the process of filling was continuous or disturbed by repeated cleaning.

The main source of information presented in this paper are Mediaeval and Post-Mediaeval cesspits from towns in the Czech Republic, with special focus on Prague.

#### **A17.07: Understanding households through waste. Cesspits in medieval towns of Tartu and Viljandi, South Estonia.**

by **Arvi Haak** (Institute of History, Tallinn University, Estonia)

The wooden cesspits of medieval towns in Estonia have mostly been interpreted as containers of finds. This approach has been reinforced by the fact that several categories of finds have only been preserved in cesspits. A few other perspectives have been introduced, such as the study of food or parasites, yet there are themes that have remained outside scientific focus. There is a perspective to reach several aspects of city life and its organisation by the study of waste and practices of its disposal.

The paper concentrates on evidence from the towns of Tartu and Viljandi to discuss the connection of households, cesspits, the study of social and economic status and practices of waste management. Intrasite as well as long-distance connections can be traced from waste, yet it is equally important to understand the fragmentarity of the evidence from the cesspits and alternative and additional practices of waste disposal. The presence and absence of certain find types in the household and in their waste is discussed, and the influence of this to the study of the medieval urban household and its connections is observed.

#### **A17.08: Edvard Munch's life and work emerging from the soil at Nedre Ramme, Vestby Norway**

by **B. Kjartan Fønsteli** (Akershus County Council, Norway), **Vilde Vegem** (Akershus County Council, Norway)

During the winter 2012/13 archaeologists from the Archaeological field unit of Akershus County excavated parts of the property Nedre Ramme, owned by the artist Edvard Munch from 1910 until his death in 1944.

During the fieldwork two pits filled with a large amount of garbage deposited during the period 1890 until 2010 were discovered. The archaeologists also excavated the floor of a large outdoor atelier.

One of the challenges was the dynamics between the archaeological practice and the role of the patron who contributed financially to the project. In this particular case, the landowner Petter Olsen, the former owner of the painting "Skrik" (sold for 107 million dollars).

Does an archaeological approach contribute to the understanding of the life and work of Edvard Munch, despite the landowner focusing on the excavation of the outdoor atelier before the garbage revealed at the property?

A solution for this problem was to detach Edvard Munch from the project. What if Munch wasn't there? What if this was an everyday archaeological excavation? Setting the same documentation standards and demanding the same scientific level as in other work was important.

#### **A17.09: Going through a lot of rubbish: Discard and behavior in the medieval site of Komana, Turkey**

by **Evangelia Pişkin** (Middle East Technical University, Turkey), **Mustafa Nuri Tatbul** (Middle East Technical University, Turkey)

In the Medieval site of Komana, Tokat, Turkey a deep pit was excavated under a layer of rubble fill and collapse materials. The pit could not be related to any other architectural remains. It was found to be unusually rich in organic materials as well as artifacts. Glazed pottery and pieces of fine glassware reflect the possibly high status of the people who used it. A large variety of animal and plants species detail their dietary habits but also there is evidence for specific

production processes documented in the high number of grape seeds and sheep extremities. Animal remains of species that are considered intrusive but contemporary to the time of use of the pit help to understand how the people tended the pit. This paper attempts to reconstruct a narration of the processes involved in the creation of this refuse and the identity of the people whose society is yet unknown.

#### **A17.10: Rubbish in the Medieval Village in Diepensee (Brandenburg, Germany)**

by Greta Civiš (University of Vienna, Austria)

Being nearly completely excavated, the village Diepensee (13<sup>th</sup>/14<sup>th</sup> century) provides an excellent database for a case-study on how a medieval rural population conceptualised, categorised and organised their refuse. As usual in settlements, the largest amount of findings are ceramic sherds which I compare to animal bones and iron refuse. In my PhD project I document and interpret these findings not only as former pots and cans, animals or samples of technology, but also as refuse with which the village-population had to find a way to interact. The theoretical approaches used allow the interpretation of rubbish as non-arbitrary feature of a society, which at the same time shapes and is shaped by human actions and values.

My first calculations and interpretations provide intriguing hints for different ways of dealing with sherds, single animal bones and animal corpses, and iron remains. Further questions will be:

- if and how the refuse was a feature to structure the farmyard as well as the village
- if and how the meaning of the classifications of refuse and their role in structuring changed over the decades.

I will present some intermediate result insights in methods, methodologies, theories, questions and working-hypotheses.

## Session A18

### Gender identities in the making – prehistoric dress and network patterns in a supra-regional perspective

Friday, 6 September 2013, 14:00–18:30

Room: UU 307 (Building 2, 3rd floor)

**Organisers:** *Sophie Bergerbrant* (University of Gothenburg, Sweden), *Karin Margarita Frei* (National Museum of Denmark, Denmark) and *Lene Melheim* (University of Oslo, Norway)

Dress, accessories and identity have long been a part of gender studies. A great variety of new information, mainly provided by new archaeological excavation methods and scientific analysis, have revealed a more complex picture than previously thought. For example, cutting edge analyses have demonstrated that raw materials and form do not always go together. Local raw materials may be shaped into forms that are foreign to the local material culture and textiles made according to local practice may contain raw materials from several different regions, from the immediate region as well as non-local to the retrieval site. Clearly, it was not only metal and stone that were exchanged in prehistory, as organic, more perishable materials also had their place in the trading networks. How does the new data influence our opinions about gender and gender identities in the past? Did factors like access to raw materials and different qualities of raw materials play a role in identity discourses related to dress and gender? Were past communities and individuals perhaps more flexible in their approach to dress and appearance than we tend to assume?

This session aims to promote a new look at prehistoric dress patterns based on the latest excavation results and new scientific analyses, combined with perspectives on gender, identity and exchange. Embracing a flexible approach to dress, and viewing textiles alongside a range of other traded goods like furs, skins, jewellery and weapons, the scope of the session is intentionally wider than that covered by traditional research on e.g. textiles or metalwork alone. Theoretical debates incorporating these aspects, as well as discussions introducing different case studies, are welcome.

#### **A18.01: Gender identity through clothing and costume in the late Neolithic and Copper Age; an interregional analysis of the statue menhir evidence c. 3200-2200 BC**

by *Susanna Harris* (University College London, UK)

With only sporadic preserved clothing dating to the Late Neolithic and Copper Age, the clothing represented on the statue menhirs of northern Italy, southern France, Switzerland and Germany offers a unique, if complex, source of information on clothing, costume and gender in the 3<sup>rd</sup> millennium BC. These clothing motifs have been investigated at a regional level, and researchers have done much to identify garment types and recognize gendered costumes of specific statue menhir groups. However, statue menhirs are also an important source of information at an interregional level. Weapons, for example are believed to represent a widespread male identity as warrior. What then can we understand of interregional gender identities constructed through clothing and costume? Indeed, can we recognize gender identities from this evidence? If so, were the same types of garment used to construct gender categories across regional groups or were these localized? Through an iconographic analysis this paper will compare the clothing motifs on statue menhirs and consider the extent to which these constructed gender and whether these expressions were standardized across regions, or whether these were of a more localized distribution.

#### **A18.02: Textiles and networks in Northern European Bronze Age**

by *Sølvi Helene Fossey* (Independent researcher, Norway), *Sophie Bergerbrant* (University of Gothenburg, Sweden)

This paper will discuss the relationship between female identity and networks in two regions, Southern Scandinavia and the Lüneburg heath, based on a new analysis of textiles and bronze objects from burials. These analyses of Bronze Age textiles from Lüneburg and Scandinavia provide us with fresh data and a more secure foundation for interpreting the female costume and making comparisons between these two regions. The Lüneburg Culture and the South Scandinavian Bronze Age female costumes have some common traits in the form of bronze objects and possibly the shape of the garments, but they also differ greatly in style and the number of accompanying bronze objects, and therefore in terms of overall appearance. It has been argued that the garments are likely to have been very similar, the interpretations of the clothing from the Lüneburger heath is mainly based on the complete costumes from Scandinavia. However, the new analysis demonstrates that there are clear and significant differences in the quality of the fabric and in the shapes of some of the garments. Observations regarding costume, garment and textile types will be the basis for a discussion of female identity and network systems within and between the two different culture groups.



**A18.03: Ornamental goods and biological anthropology: about social status and identity in early Late Bronze Age necropolis in the south-east Paris Basin (14th–11th c. B.C.)**

by [Mathilde Cervel](#) (EPHE, France), [Stéphane Rottier](#) (Université Bordeaux 1, France)

The study of funerary practices benefits from an interdisciplinary approach combining archaeology and anthropology, in order to obtain a more accurate view of the “social skin” of individuals. The paper will focus on the social organization and migration during the early Late Bronze Age (14<sup>th</sup>–11<sup>th</sup> century BC) in the south-east Paris Basin.

Several hypotheses were suggested by S. Rottier in his PhD dissertation on the social representativeness of some ornamental elements, some related to the biological identity of individuals, others related to their social status or, last but not least, the imported artifact as a window into the trade roads.

Following this previous work, my research delves further in biological observations to determine the origin of the individuals (foreigners?) as some part of the furniture suggest.

On the other hand, the decoration of artefacts, especially bracelets, is studied to specify its role in the representation of social organization.

These combined studies can therefore enable us to suggest new hypotheses on the role of ornament in early Late Bronze age societies and the various assumptions of inter-regional trade.

**A18.04: Being, Doing and Seeming: Identity and Mobility in Early Bronze Age Slovakia (c. 1600 BC)**

by [Samantha Reiter](#) (Aarhus University, Denmark), [Karin Frei](#) (SAXO Institute, Denmark)

Prehistoric identity is like a coin with three faces: who someone was, how they performed their identity, and the ways in which that identity was received by the community at large. In the past, the archaeological investigation of the identity conundrum—especially regarding cemetery material—has been two-dimensional. We have equated the reception of identity or the performance of identity with the ‘being’ of identity. A non-local funerary appearance (based upon jewellery sets or other associated equipment) was often interpreted as evidence for the foreign origin of the individual interred (i.e. the so-called *Fremde Frauen* described by Jockenhövel and Wels-Weyrauch). Recent work suggests that the creation of identity was more complex than previously recognized. This paper first presents a new theoretical point of ingress into the archaeological examination of prehistoric identity. It will then illustrate these new theoretical tenants (via the forums of gender and mobility) in a case study of individuals, grave goods and strontium isotopes from the site of Jelšovce, Slovakia.

**A18.05: Textile Tools as Status Symbols in Female Graves of the Late Second and Early First Millennium B.C. Central Mediterranean**

by [Christoph Kremer](#) (University of Bochum, Germany)

In the course of the Bronze Age textile tools in graves are becoming a widespread phenomenon, frequently documented in the tombs of rich women in the Eastern Mediterranean. The aim of my presentation is to look at the advent of textile tools in female graves in Italy during the late second millennium BC. From a typological point of view the tools have close parallels in the East. Furthermore the custom itself that textile tools form a part of the funerary assemblage is a parallel. Other objects from the graves – mostly jewelry composed of bead necklaces – have the same distribution pattern as the textile tools and seem to be another link between the two regions. This similarities in parts of the burial customs of women calls for an explanation. It will be proposed that it is the materialization of networks of hospitality in the Mediterranean, which create a sort of shared identity among the involved parties. Especially the role of women in society and their contribution to this exchange should be reviewed on the basis of gender theory, as this identity is partly verbalized through textile production, which is often wrongly seen as a mere domestic activity.

**A18.06: Detecting gender in ancient Greek dress. The case of fibulas and pins.**

by [Cecilie Broens](#) (The Danish National Research Foundation's Centre for Textile Research, Denmark)

Since textiles are only rarely preserved in the Aegean, the investigation of the relation between dress and gender must be based on secondary sources, such as the pins and fibulas which were used to fasten the garments. Fibulas appear in different contexts in the Mediterranean from c. 1200 BC, but their heyday is in the late geometric and early archaic periods. They come in many different types, which are often typical to a certain geographical area and time span, but are sometimes found far from their place of origin, which raises the question of whether they were traded, either with

or without garments, or if they represent the mobility of people. Iconography can provide knowledge on aspects of gender as men and women wearing garments fastened by pins or fibulas are occasionally depicted in different media, such as vase painting and sculpture. Yet, these representations usually belong to a period when fibulas and pins are claimed to have gone out of use.

The present paper investigates dress tradition of the 8<sup>th</sup> – 5<sup>th</sup> centuries BC across the Aegean, and seeks to determine whether it is possible to relate certain types of fibulas and pins with gendered identities and/or specific garments.

#### **A18.07: Travelling loom weights and non-local women: female mobility, textiles and identity in the Bronze Age Aegean**

by *Joanne Cutler* (University College London, UK)

During the first half of the second millennium BC, loom weights appeared for the first time at a number of sites in the southern Aegean. The appearance of the loom weights marks the introduction of the warp-weighted loom in these settlements. The loom weights themselves are of Cretan type, and are part of a much wider uptake of Cretan and Cretan-style material culture features across the region. The elaborately patterned costumes depicted in wall-paintings from a few of these sites (notably Akrotiri) suggest that the adoption of the new loom type may have been linked to a desire to produce Cretan-style textiles.

Among the loom weights are a significant number that are made of non-local clays. Loom weights are very rarely items of exchange, and therefore do not generally travel unless as the personal possessions of the craftspeople who use them. Since weaving in the Bronze Age Aegean was closely linked to women, the presence of the non-local loom weights suggests the presence of non-local women in these communities. This paper will consider the networks of connections through which textile craft knowledge and skills – and textiles themselves – are likely to have been transferred, and the implications for questions of identity.

#### **A18.08: Identity Issues in Interpreting the Archaeological Evidence of a Roman Textile Workshop**

by *Judit Pásztokei-Szeőke* (Hungary)

The Roman colony of Savaria was established in mid-1st century AD along one of the main European military and trade routes of that time, which led from North Italy up to the Baltic Sea. Recent excavations in the southern suburb of this Roman settlement yielded an abundant corpus of textile tools and inscribed commercial lead tags belonging to a workshop dated between 80 and 120 AD. Most types of these tools have no local indigenous predecessors, their parallels origin back to Italy. The commercial lead tags with abbreviated inscriptions in Latin were probably used as labels for wool and garments entrusted by clients to the care of this workshop for mending, (re)dyeing and/or fulling.

According to the first research results, there is a strong interpretive possibility that this Roman workshop refurbished used clothes. This establishment could be able to fulfil the demands of the Roman citizens settled both into this colonial territory and to the colony itself for the *Roman style* maintenance of their precious *Roman style* clothes. *Roman style* stands here for what the new settlers were used to in their former home, which might have differed from the local indigenous ways.

#### **A18.09: The textile making and the identity of the Volga Finns (by the archaeological data)**

by *Nina Pavlova* (State Museums of the Moscow Kremlin, Russian Federation)

The so-called Volga Finns is the name of a group of peoples of the Upper and Middle Volga which comprised the Muroma, Merya, Meschera, Mordvins, and the Mari people from the end of the 1st to the beginning of the 2nd millennium AD. In the 2nd millennium AD most of these peoples except the Mordvinians and Maris were assimilated by the Russians. This group of peoples is unique, because while it was subject to the strong influence of the neighboring peoples, it continued to maintain its own separate identity. The textile traditions of these peoples are poorly studied. Thus the study of about 850 textile fragments from 46 burial grounds will partly solve this problem.

The aim of the research is to consider the evolution of skills in the textile making of the Volga Finns and the differences in textile production within these people. The main task is to determine the level of the fabrication of clothing at which the self-identification of peoples occurs. Does it manifest itself at the level of the manufacturing of primary or secondary textile products, or at the level of decoration? How does the self-identification of peoples influence the craft? How were the skills transferred?

**A18.10: Change of dress – changing identity? Tradition and change in the Bushman dress of colonial Southern Africa.**

by **Vibeke Maria Viestad** (*University of Oslo, Norway*)

Preliminary studies of archaeological beads and ethnographic collections of Bushman clothing have suggested that whereas the traditional ostrich eggshell beads seem to have been associated with women specifically, the influx of colourful, European glass beads in the 1960's and -70's, changed both patterns and (gender specific) use of beaded clothing among Kalahari Bushmen (Viestad in press). In the present paper I will briefly outline these changes in the material culture. Then I will complicate the argument by exploring how these apparent changes in the gender related practices of dress, triggered by the increased availability of an exotic raw material, might in fact be contradictory as well as complementary to traditional cultural practices.

The discussion will make use of recent studies of rock art in South Africa, as well as my own work concerning interpretations of parts of the Bleek and Lloyd collection of 19<sup>th</sup> century Bushman oral traditions.

**POSTER**

**A18.01-P-4: Shimmering Textiles from Bronze Age Hungary**

by **Judit Pásztkai-Szeőke** (*Hungary*), **Péter Polgár** (*Soproni Múzeum, Hungary*), **Sophie Bergerbrant** (*University of Gothenburg, Sweden*)

During the excavation in 1979 in Sopron-Krautäcker, several Late Bronze Age (Urnfield culture, ca. 1300–800 BC) burials were found. One of these graves contained human remains and different grave goods, among which a small fragment of thin gold strip coiled around an organic band (the organic material was not preserved) was revealed. The later probably belonged either to the deceased's outfit or the funerary shroud, decorated with a small shimmering band combined of textile and gold.

Similar gold remains have been recently published from a Late Bronze Age gold hoard found in a settlement site from the western part of Hungary. Finds of tiny gold strips similarly dating to the Late Bronze Age are known from other Hungarian sites, both from burials and hoards.

Interestingly, the find spots of these earliest golden textiles from Europe are from the region of western Hungary and eastern Austria with only two exceptions from the Hungarian Transdanubia. In the poster, we will discuss these earliest European golden textiles from network and gendered point and what can these finds say about high status connection in the region.

## Session A19

### Gendered violence in the past: Materialities and corporealities

Thursday, 5 September 2013, 14:00–18:30

Room: UP 115 (Building 2, ground floor)

**Organisers:** Uroš Matić (Westfälische Wilhelms-Universität Münster, Germany) and Bo Jensen (Freelance archaeologist, Denmark)

This session aims to explore when and how violence is related to gender, and how we can recognize this in past societies.

We understand violence as both bodily and social. Bodies are mortal, vulnerable and exposed to gaze and touch of others (pace Judith Butler). Although violence is always embedded in culture, culture is not monolithic and self-explanatory given: individual life-experiences are shaped by the identity palimpsest of gender, age, ethnicity, race, status, sexuality and more. Violence does not randomly target just anybody. It is political and performative and becomes meaningful by reaching an audience, affecting even those not physically touched by it. It can be seen as an act of mastering the Other.

We invite speakers to consider when and how gender is related to legitimizations of violence; how acts of violence are structured and become politically meaningful through public display or erasure; and how material culture facilitates or hinders acts of violence. Potential aspects include traces of gendered violence such as human remains and trauma, unusual and mass graves; tools for violence, including the practical and symbolic distribution of weapons (e.g. in graves, hoards and wetlands); sites of violence, including battlefields and back alleys, arenas, public execution sites and fortifications; social narratives about gendered violence, e.g. in art, the display of trophies and symbolic distinctions between legitimate and illegitimate violence; and symbolic violence, effective in misrecognition and acceptance (pace Pierre Bourdieu). This last offers an ultimate challenge to archaeology, as the discipline primarily deals with the material remains of the past.

#### A19.01: Trauma in the Iron Gates – Perspectives of violent interaction

by **Miroslav Kocic** (University of Pittsburgh, USA)

Study of violence in prehistory is field of some of the fiercest debates in archaeology, this being especially pronounced in anthropological archaeology, where one need to explain not just if there was violence and the prevalence of it in the given population, but also *why* was it present. Main scope of this study is biological and cultural material representing Mesolithic and Early Neolithic (10000–5500 BC) sedentary groups that occupied the largest river gorge in Europe – Iron Gates. From the discovery of the fascinating Lepenski Vir/Schela Cladovei culture, there were many debates concerning prevalence of trauma with violent etiologies that dealt with those kinds of questions with more or less success. Unfortunately, there was far less work that was aimed on explaining what was the purpose of violent interactions within the society. In this study, violence is treated as a form of performative communication, and whatever was the nature of violence that was visible in the skeletal material (organized, domestic, legislative, ritual), it is always a communication of some kind, and in this paper nature of this communication, that is undoubtedly present in the Iron Gates populations, will be examined through multiple threads of evidence and comparative studies of violence.

#### A19.02: From Ofnet to Ötzi: long-term change in gendered violence

by **John Robb** (Cambridge University, UK), **Sheila Kohring** (Cambridge University, UK)

Since the 1990s, we have realised that the Neolithic is not peaceful, with evidence of violence at all periods of prehistory including the Neolithic. Yet, there is clearly a much greater symbolic focus upon weaponry and the capacity for violence from the 4<sup>th</sup> millennium onwards, when weapons become a key symbol of social masculinity. How does this symbolism relate to patterns of actual harm? Taking a broad vista from skeletal and burial evidence, we argue that actual levels of violence may not have been greater in the Copper and Bronze Ages, but that violence was organised differently. Neolithic violence rarely shows a clear preference for particular ages or sexes. Including all degrees of violence from common non-lethal fractures to large massacres, one gets the picture of raids, ambushes and killings which involved all members of society indiscriminately. In contrast, from the 4<sup>th</sup> millennium onwards, with a few exceptions, violence is increasingly concentrated in adult males, suggesting that new gender ideologies carried significant life risks. As this suggests archaeologists should analyse violence neither as a purely cultural discourse nor as an inevitable universal fact, but as a historically situated form of bodily action.

### **A19.03: Sexual division of labor in Neolithic societies of NE of Iberian Peninsula: an approach from the analysis of graves**

by **Stéphanie Dubosq** (*Universitat Autònoma de Barcelona, Spain*), **Juan F. Gibaja** (*Institució Milà i Fontanals-CSIC, Spain*), **Raquel Piqué** (*Universitat Autònoma de Barcelona, Spain*)

The goal of our work is analyzing the evidences of sexual division of labor during the neolithic in the north-east of Spain (Catalunya).

This topic generates questions to which we will try to provide maybe not answers but at least ideas to consider. The topic of sexual division of labor has been studied for the societies of hunter-gatherers, however there are few studies focused on the agricultural societies. Specifically, in case of the first agricultural and pastoral societies of the north-east of Spain, few researches were conducted.

In the one hand, the objective of our work is to understand the social organization of this society and try to develop theoretical and methodological tools which could be used to study the sexual division of labor in any society, past or present. In the other hand we want to verify if sexual division of labor involves any kind of violence against women.

This research consists in an evaluation of possible archaeological indicators of the sexual division of labor in the neolithic graves of Catalonia. We pay attention to different criterium: the amount of men and women buried, the funerary material, the bone diseases, etc.

We would present preliminary results of data analysis.

### **A19.04: The honoured and the sacrificed? Gender and violence at a sanctuary of the late 3rd millennium BC in Central Germany**

by **André Spatzier** (*Martin-Luther-University Halle-Wittenberg, Germany*)

The complex architectural design, numerous deliberate depositions and the finds suggest that the circular enclosure of Pömmelte-Zackmünde, Saxony-Anhalt, was used as a place for various social practices, performance and ritual activities. It is one of the few sanctuaries from the late 3<sup>rd</sup> millennium BC in Central Europe. Of particular importance are several graves and 29 shaft-like pits containing offerings or disposed ceremonial paraphernalia.

The ‚regular‘ graves respect the enclosure’s layout. They only contained the skeletal remains of adult men. The formal burial in the enclosure likely was something not granted to everyone. Opposing this group are female, infant and juvenile individuals that were thrown into the shafts aforementioned. Most miss body parts and some skeletons bear multiple perimortal trauma. The evidences indicate that these individuals were treated impiously and that some were killed.

The gendered burial practices in this enclosure not only show that it served as a place to reinforce social order. They also indicate that this included gender specific violence. Contextual informations suggest these acts of violence were legitimized by their ritual meaning. Integrating the evidence I try to draw inference about the question: Does the archaeological record tell us a story about the honoured and the sacrificed?

### **A19.05: What is wrong with this picture? Queen Nefertiti smiting an enemy**

by **Uroš Matic** (*University of Muenster, Germany*)

Egyptian representations of the king smiting an enemy have long history from predynastic to Roman period. The scene of smiting an enemy is an ideological topos directly connected to kingship and masculinity in the Egyptian decorum. The only so far known Egyptian queen thus represented is Nefertiti, great royal wife of king Akhenaten. Nefertiti is depicted in this scene on a limestone relief found in Hermopolis and a talatat block found in Luxor. Previous studies of these representations concentrated on their peculiarity and excellence, stressing how Nefertiti assumed royal prerogatives. This inspired popular reconstructions of the life of Nefertiti, depicting her not only as an independent and powerful woman, but also as blood thirsty queen smiting the captive enemies in reality. This image of Nefertiti is not only an orientalist binding of feminine rule and power with cruelty and danger, but also a neglect of the fact that she is depicted smiting female enemies. This paper explores the gendered boundaries of legitimate violence in Egyptian decorum, concentrating on Neferiti in smiting an enemy scene. Closer reading and more contextualised approach is offered in order to show if and how is Nefertiti crossing the gendered boundaries.

#### **A19.06: Violence, gender and headhunting in Iron Age Europe**

by **Ian Armit** (University of Bradford, UK)

Headhunting, as a form of ritualised violence, occurs frequently in the ethnographic literature, in communities widely dispersed both spatially and geographically. Often, it is associated with concepts of fertility, of crops, animals and people (Armit 2012). With rare exceptions, participation in headhunting raids is a male preserve, although the subsequent processing and curation of heads are often seen as female roles. In certain cases, as among the Ecuadorian Shuar, rites associated with headhunting can be read as an appropriation of female productive power by male warriors; rendering female-dominated agriculture subordinate to male-dominated warfare. Evidence from Europe suggests that similar concerns were implicated in Iron Age headhunting. In Mediterranean France in particular, a unique constellation of archaeological, literary, iconographic and osteological evidence provides unparalleled insights into the development of headhunting ideologies through time. Using insights developed from ethnographic case studies, this paper considers iconographic evidence from sites like Entremont, Mont-Garou and Saint-Pierre-de-Martigues, to examine critically the relationship between representations of male and female elite identities.

Armit, I. 2012. *Headhunting and the Body in Iron Age Europe*. Cambridge University Press.

#### **A19.07: Violence towards women in Greco-Roman Egypt**

by **Christine Hue-Arcé** (Université de Strasbourg, France)

Women in Ancient Egypt were confronted daily to physical violence. However, it is difficult to say whether this violence was specific to them because of their womanly status, or whether it was the same as the one affecting their fellow men. This phenomenon is particularly interesting for the Greco-Roman period, due to the material diversity: for this epoch, we dispose of paleopathological evidences, some Demotic documents and a considerable Greek documentation.

This last one has been well studied by papyrologists. Even so, they did not compare this documentation with the Demotic one. Some Demotic texts – documentary and literary – bear witness to violence towards women. The type of violence, the vocabulary and the context, must be taken in account to determine the potential specificity of violence perpetrated upon women, by comparing these data with those related to men. These comparisons will be enhanced by the consideration of a paleopathological study of cranial trauma in the Bahariya Oasis during the Greco-Roman period.

The confrontation of the papyrologists studies results, the Demotic documents and the paleopathological evidences will enable to ascertain whether there was or not a gendered violence against women in the Greco-Roman Egypt.

#### **A19.08: Gender identity as the subject/object of political dominance**

by **Maryam Dezhkamhooy** (University of Birjand, Iran (Islamic Republic of)), **Ali Roustaeeyanfar** (independant researcher, Iran (Islamic Republic of))

Sassanid dynasty was one of big empires of ancient Persia dating from 224 to 651 A.D. Sassanid state was based on a concentrated political structure, presenting in the concept of “king of kings”. Sasanian dynasty with a great tendency to centralism has innovated some strategies to achieve a dictatorial concentrated empire. Therefore, violence as an ideological phenomenon is exerted subtly to create conformity and dominance . masculine subjectivity institutionalized in power structure and materialize in the “king of kings”. King of kings as the symbol of super masculine power puts his body and agency in the hands of propaganda. To display imposing physical violence are the main concerns of Sasanian visual art resulted in creating vast rock reliefs. This kind of legitimate legal yet masculine violence has been narrated positive in visual arts as heroism, it is displayed as “pure beauty”. About 40 sasanian rock relief sites displaying such scenes are probably sites of some performances only open on royal family male members and noblemen.

This research investigate gendered violence from a new angle. When the gender identity of dominant agent become the first victim of violence and propaganda.

Key words: Sasanian Iran, masculinity, violence, conformity, propaganda.

**A19.09: Gendered patterns of violence in Merovingian times: Skeletal evidence from Early Medieval cemeteries.**

by Christian Meyer (University of Mainz, Germany), Kurt W. Alt (University of Mainz, Germany)

Attested by many finds and archaeological features violence has been a constant part of human societies in the past. The most direct evidence is provided by human skeletal remains which bear witness to attacks directed at an opponent's body. Although not all acts of violence leave tell-tale scars on the skeleton, the analysis of larger cemeteries can provide insight into patterns of traumatic injuries on the population level. Age, sex, and social status are among the attributes which may affect the probability to become a victim of violence. In this light, the large Merovingian cemeteries provide an ideal substrate to identify and analyse these patterns using a biocultural approach.

Two Early Medieval but very different burial sites from Germany, one attached to a Late Roman fort at Bitburg, the other a large row grave cemetery from Mannheim have been screened for traumatic injuries and the respective patterns of violence have been determined. Whereas younger men were the usual victims of violence at both sites, women were rarely affected in Mannheim, but quite often in Bitburg. Possible explanations for these differences are given within a biocultural framework, specifically including the differing gender experiences at both sites.

**A19.10: Vengeance promised, vengeance delivered: Viking Age narrative art as a frame for gendered ethics of violence**

by Bo Jensen (Independent, Denmark)

The Viking Age (roughly AD 750-1100) was famously violent. Vikings (and contemporary Christian kings) raided outside their own lands, and vendettas seem to have played a central role in social dynamics inside these societies.

Viking Age monuments illustrate legendary vendettas. I argue that these legends provided people with powerful, gender-specific ideals of right and wrong violence. Men were encouraged to measure their violence carefully, maintaining society by getting even without emotional commitment. Women were encouraged to stand back from direct violence unless all-out destruction was necessary. Unprovoked and escalating violence inside the group was equally condemned for men and women.

Viking Age monuments are not just passive traces of this process. They actively participated in promoting particular ideals and interpretations of violence. Moreover, Viking Age Scandinavia was very unevenly furnished with monuments, with large bodies of work in a few locations (Gotland, Yorkshire) and large areas without monuments. I use Judith Butler's work on identity and frames of violence (Butler 1993; 2004; 2007) to discuss why some, but not all, Viking societies needed a public, aesthetic of violence.

**A19.11: The weapons make the man? A discussion of Anglo-Saxon stereotypes and the power of material culture.**

by Laura Whitehouse (University of Birmingham, UK)

This paper focuses on gender and sex in Anglo-Saxon burial archaeology. The main fuel for this discussion has been PhD research and data collected from early Anglo-Saxon East Anglian and Kentish cemeteries. The aim of the paper is to highlight the archaeological misconceptions that surround the notion that 'weapon equals warrior' in terms of burial rites. This theory emerged from the use of weapon assemblages as definitive indicators of the roles of the buried. This discussion also incorporates the use of material culture as an indicator of sex instead of gender. The problem has risen from the acceptance of material evidence as a definitive sexual signifier, both in the absence of human remains and where material culture and human remains are in contention over sex. The paper discusses the way this process has been used in cemetery reports and subsequent publications where the mode of sexual determination has not been declared. This can happen where the cemetery data is taken at face value and used to base hypotheses on for the society or group in question. Burial is, and will remain one of the most interesting avenues for Anglo-Saxon research, but it is, as with many areas of research, littered with subjectivity that we need to be aware of.

#### **A19.12: Skeletal evidence of violence directed against women in the eastern Adriatic coast and its hinterland during the Late Medieval Period**

by **Mario Novak** (*Croatian Academy of Sciences and Arts, Croatia*)

As part of the bioarchaeological project studying skeletal samples from the eastern Adriatic coast and its hinterland a survey on the possible presence of violence directed against women during the Late Medieval Period (13th-16th century AD) was conducted.

Seven late medieval skeletal samples were included in this study (Dugopolje, Eraci, Lištani, Nin, Starigrad, Vrsi, and Zadar) with the total of 1200 individuals of which 340 were female skeletons. The following skeletal indicators of deliberate violence were included into the analysis: craniofacial trauma, ulnar parry fractures, perimortem trauma, and sharp force trauma. Indicators of violence were recorded in 13 individuals suggesting that about one in 30 women were subjected to some kind of intentional violence. This rate is underestimated and is probably much higher because skeletal injuries represent no more than 40% of all injuries acquired during assaults, i.e. most of the injuries are soft tissue trauma not visible on bones. The majority of the recorded traumas in this study are characteristic of domestic violence, but some indicate the use of sharp-edged weapons resulting in fatal consequences.

Numerous written historical sources also testify that violence directed against women was a relatively common phenomenon in this region during the Late Medieval Period.



## Session A20

### Geophysics in the studies of late Prehistory

**Saturday, 7 September 2013, 14:00–18:30**

**Room:** UU 405 (Building 2, 4th floor)

**Organisers:** **Branko Mušič** (University of Ljubljana, Slovenia), **Hrvoje Potrebica** (University of Zagreb, Croatia) and **Matija Črešnar** (Institute for the Protection of Cultural Heritage of Slovenia, Slovenia)

In the recent years remote sensing has made enormous progress when it comes to dealing with archaeological heritage throughout Europe and beyond. Projects including aerial imagery, lidar scanning and geophysics, and also integrated studies, are increasingly covering vast areas and are producing enormous amount of data. Landscape archaeology is thus becoming one of the most fast-developing fields within archaeology.

However, although trying to understand the whole landscape in all its depth, it is easy to forget that we are dealing with a palimpsest of imprints, which we have to understand as separate time-slices to open the gates to individual phases of its formation.

Focusing on geophysics, which incorporates a wide range of different techniques and methods, we can observe at least two different ways forward. One of them is heading towards an extensive collection of data, where we are encountering deficits in thorough data analysis, whereas the goals of the other are accuracy and precision when it comes to identifying buried archaeological structures.

When dealing with the Bronze and the Iron Age in most regions of Europe, we come across diversified landscapes, which are followed by distinctive archaeological monuments which are in most cases perfectly adapted to their environments. However, it is not only the better known hillforts and burial mounds from the Iron Age in many parts of Europe that are important; there is much more that was and still is forming the (pre)historical landscapes.

We invite contributions which examine the ways geophysics can be used in researching late prehistoric landscapes. Geophysics can be presented as an independent method or as part of integrated studies, dealing with wider landscapes, as complementary to the use of different techniques, with specific research questions; however, papers which deal with other similar topics are also welcome.

#### **A20.01: Geophysical Prospection as a tool for archaeological landscape analysis**

by ***Petra Schneidhofer*** (University of Vienna, Austria)

During the last two decades, geophysical data acquisition has advanced remarkably in terms of speed and sensitivity, allowing for the first time large-scale 3D multi-method approaches and hence the archaeological prospection of entire landscapes. This technological progression was partly a logical enhancement of existing methodologies and tools, but at the same time it emerged as a shift in archaeological research from studying individual archaeological sites towards the possibility of understanding the past as dynamic archaeological landscape entities. Besides providing a substantial database for the investigation of archaeological remains, this new generation of geophysical datasets offers an opportunity to study palaeoenvironmental features as an equally important part of how archaeological landscapes have developed and changed through time. However, elaborate approaches to data management and interpretation are required in order to fully benefit from the data available.

The landscape around the Viking Age burial mound of Gokstad is used as a case study to demonstrate the potential of large scale, high resolution magnetometry and GPR data sets for the study of archaeological landscapes. A special focus lies in the analysis for palaeoenvironmental features and their implications for the interpretation of the detected archaeological remains.

#### **A20.02: Walking before you run: Geophysical explorations of Rural Life in Italian Protohistory**

by ***Kayt Armstrong*** (University of Groningen, The Netherlands)

As part our research in northern Calabria, a variety of geophysical surveying methods have been employed to examine the archaeological landscape of late prehistory. Our work is concerned with locating and understanding individual small-scale geophysical anomalies, and exploring their relationships with surface scatters of ceramics. This paper will consider in detail a library of anomaly types we have been building up since our first pilot surveys in 2006. We have collected data about specific anomalies using a variety of geophysical and archaeological techniques, including test pits, with measurements on sections and surfaces, and laboratory analysis of sampled materials. These intensive studies have allowed us to model physical properties of archaeological features giving rise to the specific geophysical anomaly

and they can be used for more confident interpretations of unexcavated anomalies. These investigations are intended to help answer methodological questions about archaeological and post-depositional processes that lead to a landscape of small rural ceramic scatters. We will argue that a deeper understanding of very local processes and effects is needed before geophysical surveys can be 'scaled up' to whole landscapes, as the organisers suggest, and that we need to walk before we run off and collect terabytes of data.

#### **A20.03: Geophysical survey using Magnetic method and GPR on Classical-Hellenistic site Düzen Tepe – Turkey.**

by **Igor Medarić** (*Dunajska 17, 1000, Slovenia*), **Branko Mušič** (*Univerza v Ljubljani, Filozofska Fakulteta, Slovenia*), **Kim Vyncke** (*Katholieke Universiteit Leuven, Sagalassos Archaeological Research Project, Belgium*), **Matjaž Mori** (*Danile Kumarjevo 1, 1000, Slovenia*), **Marc Waelkens** (*Katholieke Universiteit Leuven, Sagalassos Archaeological Research Project, Belgium*)

In 2005, during the annual 'intensive' archaeological surveys in the peri-urban zone of Sagalassos (Pisidia, southwest Anatolia), the remains of an extensive Classical-Hellenistic settlement were identified at Düzen Tepe, situated 1.8 km southwest of Sagalassos. Between 2005 and 2010, geophysical survey was carried out on the site, using both GPR (georadar) and magnetometry to different extents, in order to trace subsurface remains in geomorphologically variable karstic conditions. The shallowly buried remains of structures (in fact, their limestone socles) were quite clearly detected by both methods. The strong contrast between the magnetic susceptibility of the limestone building material and the topsoil even allowed tracing internal subdivisions of the structures. From magnetic results, identification of various geometrically coherent anomalies of induced magnetisation related to walls and high anomalies caused by thermoremanent magnetisation were recognised. Some of the typical anomalies were carefully elaborated with archeomagnetic models, supplemented by results of excavations and of GPR, with the goal of understanding how the strength of the anomalies depends on the size and depth of conservation in which the subsurface structures are located.

#### **A20.04: Geophysical Prospection of Bronze Age Cemeteries in the Southern Ural Mountains of the Russian Federation**

by **Bryan Hanks** (*University of Pittsburgh, USA*)

This paper details the results of geophysical surveys of several cemeteries dating to the Middle to Late Bronze Age (ca. 2100–1500 BC) in the steppe environmental zone of the Southern Ural Mountains. This research has been undertaken as part of a multi-method approach (pedestrian survey, geochemical analysis, geophysical survey and targeted excavation) to understanding landscape use and transitions in settlement and cemetery patterning. Cemeteries during the Bronze Age in this region exhibit from five to as many as fifty barrows (*kurgans*). The formation of the cemeteries appears connected with Middle Bronze Age societies (ca. 2100–1700 BC), however, later intrusive barrow constructions dating to the Late Bronze Age, Early Iron Age and Medieval Period are recognized and reflect palimpsests of human activity and long-term use of specific mortuary areas. Relatively little geophysical prospection of late prehistoric cemeteries has been undertaken in this region of Russia and the results detailed in this presentation will provide an overview of the utility of geophysical survey and important results to date of this work.

#### **A20.05: Multidisciplinary investigation of the Bronze Age settlement in the Southern Trans-Urals: Remote sensing – Geophysics – Excavation**

by **Svetlana Sharapova** (*Institute of History and Archaeology, Urals Branch of the Russian Academy of Sciences, Russian Federation*)

Over two score of settlements have been mapped in the Southern Trans-Urals steppe. Their locations are basically known from aerial photos, just a few have been investigated through excavations. In this paper a study of Konoplyanka enclosed settlement is presented as an example of analyzing of archaeological imaging and uncovering unique data that is unobtainable using traditional archaeological excavation techniques. This site, as well as two others, are encompassed by the Russian-German collaborative research project in the valley of the Karagaily-Ayat river.

Unfortunately, the site has been systematically ploughed during the last 50 years. Therefore, its relief is completely levelled. This fact dictated the necessity of a detailed geophysical survey. The obtained geophysical map provides a general layout of the settlement, position and size of houses, spaced wells. The magnetogram suggests that this particular site was inhabited for a short-time (mono-component), especially when compared to the nearest neighboring site. Furthermore, the paper will show a correlation between data obtained by geophysical prospection and archaeological excavation as well as other remote sensing technique, such as aerial photography and LIDAR, and discuss

some questions that appear to be interesting. This research was supported by Programme of Urals Branch of RAS (grant 12-M-456-2024) and RFBR (grant 12-06-91330-DFG\_a).

#### **A20.06: Geophysical measurements of various types of the Bronze and Iron Age sites and activities in the Czech Republic: questions and possibilities of integration of data**

by **Roman Křivánek** (Institute of Archaeology, AS CR, Prague, v.v.i., Czech Republic)

The development of geophysical equipment in the Institute of Archaeology in Prague since the 2nd half of the 1990s has opened up new possibilities of geophysical surveys of different BA and IA sites. Geophysical surveys have become part of several long-term archaeological and archaeogeophysical projects and their results have been used in several issues of landscape archaeology. New possibilities of equipment and software in the last decade has enabled more systematic cooperation of geophysicist and archaeologists not only for extensive monitoring of major fortified sites (La Tène oppida, Bronze Age or Hallstatt hillforts, supra-regional La Tène trade centers), selected burial mounds, cemeteries and open settlements, but also for other targeted surveys aimed at studying of other areas and activities in landscape (e.g. La Tène quadrangular enclosure or manufacturing areas, Bronze Age enclosed areas or other specific places – water resources, communications, etc.). Current possibilities of combining geophysical results with more non-destructive methods, old maps and archaeological investigations not only offer new possibilities for the use of geophysical data (theoretical, landscape, regional archaeology, conservation, protection and popularization of archaeological monuments), but also raise questions as to where, how and why effectively continue research for example in the form of new projects.

#### **A20.07: Integrated studies of the Early Iron Age centres between the south-eastern Alps and the Pannonian plain**

by **Branko Mušič** (University of Ljubljana, Slovenia), **Matija Črešnar** (Institute for the Protection of Cultural Heritage of Slovenia, Slovenia), **Hrvoje Potrebica** (University of Zagreb, Croatia)

The Early Iron Age landscapes between the south-eastern Alps and the Pannonian plain are marked by monumental structures such as hillforts, some of them with a central character, accompanied by nearby barrow cemeteries, and by lowland sites located in central parts of river plains.

The use of remote sensing in recent years has brought about encouraging progress in our knowledge about these sites and their complex landscapes. Our projects, including aerial imagery, lidar scanning and geophysics, often combined in integrated studies, have encompassed even larger areas, but have also included also detailed case studies.

This time we will focus on a broad array of geophysical methods applied with an accent on some non-traditional interpreting tools, such as direct and inverse problem of interpretation. We will also present other advanced processing flows adopted for the purpose of revealing specific prehistoric targets in different natural settings and archaeological contexts. Special attention will also be dedicated also to innovative, case sensitive approach to composition analyses of different late prehistoric barrows.

#### **A20.08: Revealing Iron Age Monumentality: Geophysical Survey of an Exceptional Settlement Type in Northern Serbia**

by **Holger Wendling** (Salzburg Museum, Austria), **Miloš Jevtić** (University of Belgrade, Faculty of Philosophy, Serbia)

In cooperation with the University of Belgrade, the Serbian Institute of Archaeology and the Museum of Vojvodina, the Roman-Germanic Commission conducted geophysical survey which provided important information on the late Iron Age settlement record of northern Serbia. Slight elevations above the flat surface of the Danube floodplain indicate the remains of a prehistoric fortification at Bačka Palanka in Vojvodina. Stray finds of ceramics date to the 1st century BC. In spite of some small-scale excavations, the structure and layout of the site were largely unknown. A large-scale geophysical survey in 2012 greatly enhanced this limited database and led to the identification of an unfamiliar type of settlement. Within the massive fortification, geomagnetic anomalies represent dug-in features and a complex, but regular internal layout, while numerous features outside the rampart account for an intense occupation in its surroundings. Details of rampart construction and a monumental gate indicate an ostentatious display of wealth and power. An unfamiliar ditch system encompasses the central fortification, significantly increasing the overall settlement area. Whether the unprecedented settlement layout at Bačka Palanka can be interpreted as an elitist residence will be discussed through its comparison to contemporary sites in Central and Western Celtic Europe (*Viereckschanzen* and *fermes indigènes*).

#### **A20.09: Lidar and geophysical survey at the Hill of Ward, Co. Meath, Ireland.**

by **Stephen Davis** (University College Dublin, Ireland), **Chris Carey** (Carey Archaeological Consulting, UK), **Elizabeth Richley** (University of Southampton, UK)

The Hill of Ward, Athboy, Co. Meath, Ireland has been described by Prof. George Eogan as 'one of the great Celtic sites of Ireland'. It comprises a large (130m diameter) quadrivallate enclosure known as Tlachtga, with stone-cored banks rising to c. 2.5m in places. Although unexcavated, the site has long been considered of late Iron Age type (e.g. Newman 1997) and was described by early historic sources as the druidic centre of Ireland.

Unlike many similar sites in Ireland which often form part of ritual complexes, Tlachtga appeared until recently to stand in isolation. However, lidar survey in 2010 revealed numerous other features local to the site, including deserted settlements, barrows, outer embankments and a Neolithic henge. In Summer 2012 this was followed by extensive gradiometric survey across Tlachtga itself and a number of other anomalies. Unexpectedly it was found that the current enclosure is constructed in one quadrant of a much larger, earlier multivallate enclosure. This poses important questions regarding the chronology of the site and its place within the Irish archaeological landscape.

This paper will present an outline of both the lidar-based survey and geophysical results, and discuss their importance for the character of later prehistoric monuments in Ireland.

#### **POSTERS**

##### **A20.01-P-3: Prehistoric landscapes of the Yorkshire Dales (UK): a GIS approach**

by **Hannah Brown** (University of Bradford, UK)

The Yorkshire Dales contain some of the best-preserved and most extensive Prehistoric upland landscapes in Britain. Later Prehistoric coaxial field systems of considerable complexity and time-depth can be found in the form of numerous parallel field boundaries which extend across large tracts of the valley sides and moors. These field systems are comparable to the better known and internationally important Prehistoric 'reave' systems on Dartmoor, but have received considerably less research attention.

This poster introduces the research approaches of the PhD project that draws together a diverse range of relevant sources to create a GIS-based synthesis that will facilitate data interrogation and analysis on a landscape scale. The project incorporates documentary, cartographic and aerial photographic materials, as well as geophysical and topographic fieldwork, with the intention of evaluating the spatio-temporal evolution of the systems, considering the potential social implications of their development, and examining the landscape against the backdrop of other examples from northwest Europe. The GIS also provides a platform for public engagement with the landscape data and assists heritage resource management.

Supervisors: Prof Ian Armit and Dr Chris Gaffney (University of Bradford), Robert White (Yorkshire Dales National Park), Dr Roger Martlew (Dales Landscape Heritage).

##### **A20.02-P-3: Evaluation of magnetic method results by generating 2D models of excavated features at the Middle Bronze age site of Alilovci near Požega, Croatia.**

by **Igor Medarić** (Univerza v Ljubljani, Filozofska Fakulteta, Slovenia), **Janja Mavrović Mokos** (Filozofski fakultet Sveučilišta u Zagrebu, Croatia)

Between 2009 and 2012, small scale excavations on archaeological site of Alilovci near Požega, Croatia uncovered traces of a Middle Bronze Age settlement. Until now, ceramic material – a combination of Litzen and Belegiš cultures – was not known in this part of Slavonia. These and some other finds incited a lot of interest in the site, and called for the use of other research methods for better understanding of settlement's development and organisation. For this purpose, in 2012 the magnetic method was introduced in an area close to earlier excavations, with a view to establishing its applicability in specific natural and archaeological context. The magnetogram shows two general clusters of anomalies of different shapes and magnitudes in two separate areas. Some of the anomalies selected for excavation were confirmed as houses, and others as pits. During the excavations, susceptibility measurements were taken for revealed archaeological features, and for generating 2D magnetic models, which would allow more reliable interpretations. On the basis of the first field campaign productivity, geophysical prospection on a much larger scale has been planned for the near future.

## Session A21

### Indigenous Communities in Conquered Landscapes

Thursday, 5 September 2013, 08:30–13:00

Room: UU 405 (Building 2, 4th floor)

**Organisers:** Aleks Pluskowski (University of Reading, UK), Heiki Valk (University of Tartu, Estonia) and Maciej Karzewski (University of Białystok, Poland)

Where colonisation has been accompanied by military conquest, it typically results in social and political reorganisation, the introduction of new cultural elements and shifts in the exploitation of colonised landscapes and seascapes. The cultural encounters between colonising and indigenous populations can result in the adoption and adaptation of select cultural elements, which are particularly well represented in material culture. Nonetheless, the colonising perspective is often over-represented in historically documented societies, where social reorganisation following conquest and colonisation was framed within imported political, economic and ideological structures, and accompanied by technological change and ethnic reconfiguration.

However, indigenous communities also had opportunities to select which cultural elements were adopted. The most important was expressed as ideological contest and inter-ideological relations; for example, in eastern Baltic Europe in the 13th century or the Caribbean in the 16th century, a clash of incoming Christian European and indigenous, non-Christian worldviews. In these cases, whilst the process of colonisation resulted in the development of towns, the indigenous population remained largely confined to the countryside. Rural communities are typically the most conservative and the longest to resist incoming political and religious trends, as well as imported fashions and technologies. So whilst cultural changes following conquest were reinforced by political, ideological and military hegemony, to what extent did this have an impact on indigenous communities, particularly those situated at the physical fringes of the new regime's control? Moreover, what was the nature of this impact?

This session proposes to explore the material culture and practices of indigenous communities within conquered landscapes of different regions and time periods, in order to explore the value of a different perspective on the process of colonisation and the nuances of cultural encounters in regions of conflict.

#### **A21.01: Palaeoenvironmental perspectives on indigenous communities in conquered landscapes: the example of the late Iron Age and medieval south-eastern and eastern Baltic.**

by **Alex Brown** (University of Reading, UK)

The late Iron Age and medieval period in the south-eastern and eastern Baltic is a time of social, economic and political development, dominated by the Crusading movement of the 13<sup>th</sup>–15<sup>th</sup> century. The Crusades resulted in significant changes to the ownership, administration and organisation of the landscape. Conquest was accompanied by colonization, the development of towns, castles and rural settlements, occurring in tandem with agricultural and economic expansion and the growth of pan-European trading networks. This was preceded in northern Poland by Slavic colonization from the 8<sup>th</sup> century, the expansion of the Polish state from the 10<sup>th</sup> century, and in parts of the eastern Baltic by demographic and economic expansion during late Iron Age. Significant changes in vegetation and land-use across parts of this region have been ascribed to these phases of conquest and colonization, characterised by significant and often prolonged declines in woodland accompanied by agricultural intensification. However, this paper explores the indigenous dimensions of these changes, and considers the difficulties in identifying palaeoenvironmental evidence for indigenous responses to conquest and colonization, for example in the form of rural land-use change, or evidence for continuity/survival of indigenous landscapes and land-use practices.

#### **A21.02: Infectious diseases in urban and rural areas in medieval and post-medieval Livonia: human osteological data from Tartu and its hinterlands**

by **Martin Malve** (University of Tartu, Estonia), **Heiki Valk** (University of Tartu, Estonia)

Human osteological data provide information also about the spread of infectious diseases in medieval societies. Especially the traces of syphilis, leprosy and tuberculosis can be observed on human bones. Leprosy began to spread in Estonia in the first half of the 13th century, syphilis – since the early 16th century. Traces of tuberculosis have been discovered only from early modern times in Estonia, but, considering data from Latvia and Lithuania, its medieval presence is most likely. The spread of infectious diseases also reflects the involvement of medieval and urban communities in contacts and communication.

The presentation analyses source materials from Tartu, one of the three biggest towns of medieval Livonia, and its rural hinterlands. The data originate from 2 urban and 5 rural cemeteries, located in the radius from 5 to 35 km from town border. Preliminary investigation results enable us to suggest that syphilis, leprosy, tuberculosis and other infectious diseases were more widespread among urban population, less frequently in the vicinity of towns but most rarely in distant village communities.

#### **A21.03: The indigenous exploitation of animals in a conquered land: the example of medieval Livonia**

by **Aleksander Pluskowski** (University of Reading, UK), **Krish Seetah** (Stanford University, UK), **Mark Maltby** (Bournemouth University, UK)

The conquest of indigenous societies in the region which became known as Livonia is often interpreted as resulting in a segregated society, with a separation between the incoming colonists and the existing population. In fact levels of interaction between the two populations varied, and it is clear that indigenous people worked and lived in some castle outer baileys and surrounding settlements, as well as participated in the life of major towns such as Riga. Animal bones represent one of the most abundant sources of data from such sites. Given the introduction of new food cultures following the creation of the Livonian crusader state, particularly aligned to Western European lifestyles and Christian fasting regimes, to what extent is it possible to see indigenous traditions of animal husbandry and alimentation surviving into the late medieval period? Are the levels of segregation suggested by archaeologists visible in the faunal record, or is there evidence for synchronicity in animal husbandry, meat processing and dietary regimes amongst the incoming and indigenous populations? This paper will present a series of case studies contributing to our understanding of the relationship between the colonising and indigenous cultures, primarily focusing on material from medieval Riga.

#### **A21.04: Medieval Stone Crosses in South-eastern Frontier Area of Livonia**

by **Juris Urtans** (Latvian Academy of Culture, Latvia)

In 2011 eight stone crosses with carvings of different signs were surveyed in Piedruja Tolojevci cemetery in Latvia. The origin of the Tolojevci stone crosses could not be earlier than the 14th century and no later than the 17th century. Tolojevci stone crosses constitute the largest collection of medieval stone crosses from any one place in Latvia. Stone crosses or information about them have been found in the vast frontier area of Livonia; similar stone crosses are also known beyond the borders of former Livonia in the territories of present-day Belarus and Russia. The shape of Tolojevci stone crosses, the diversity of carvings, little-explained symbolism of crosses and carved signs allow us to presume that the crosses described, namely, the cemetery where they had been erected, and should be associated with local centrality, perhaps a certain independence, bellicosity and material opportunities, characteristic for the population of the Livonian frontier area. This was by no means a borderline at this time, but a zone of varying breadth, which allowed a peculiar tradition of cemetery arrangements to emerge. Similar archaeological complexes associated with the Livonian period and local centrality are also noticeable elsewhere in the frontier area of Livonia and Muscovy, in the territories of present-day Latvia and Estonia.

#### **A21.05: The Medieval Prussian Lauks Staświny in the Galindia territory (NE Poland)**

by **Małgorzata Karczewska** (University of Białystok, Poland), **Maciej Karczewski** (University of Białystok, Poland), **Aleksander Pluskowski** (University of Reading, UK), **Monika Badura** (University of Gdańsk, Poland)

Research on the relationship between people and the environment in the former territory of the West Baltic Tribes is still at the initial stage. It is for the first time in the history of archaeological research in this area, when a multi-disciplinary approach has included archaeological excavations, geophysical survey and other non-invasive methods, as well as palynological, paleobotanical, archaeozoological, archaeoichthological, geological, geomorphological and palaeohydrological analyses. In effect, a holistic reconstruction of the environmental context of the Prussian settlement's micro-region was obtained. This micro-region, which in the medieval Prussian language was called a *lauks*, is situated at the southern edge of the medieval Prussian area in the contact zone with Slavs. Many local names of lakes and places, of Prussian origin, are still preserved in this territory. So it is highly likely that some of the descendants of the Prussian population were living there in the centuries following the conquest of the Teutonic Order. This provides an additional opportunity for research on the evolution of relations between Prussians and their environment in the wider perspective of historical times.

#### **A21.06: The impact of crusading on indigenous animal subsistence strategies in medieval Prussia**

by **Daniel Makowiecki** (Nicolaus Copernicus University, Poland), **Marzena Makowiecka** (Archaeozoological Laboratory, Poland), **Aleksander Pluskowski** (Reading University, UK), **Miroslawa Zabilska** (Nicolaus Copernicus University, Poland)

The arrival of the Teutonic Order in Prussia and development of their powerful state were crucial events in the political, social and economic life of the indigenous societies they conquered. Today, the effects are very easy to read in the landscape of this region through their brick castles and remains of monuments. Historical studies, as well as archaeological and architectural research, have provided a more detailed overview of the crusaders and their state in this region. This also concerns animal subsistence strategies. On the other hand, to date, very little in consideration on the subject has combined zooarchaeological data with relevant historical records. Therefore, this paper will present the results of research carried out on faunal assemblages which were uncovered during excavations linked to the Ecology of Crusading project. On this basis the authors will consider the dietary changes, breeding strategies, hunting and fishing and the impact on the natural environment resulting from the Teutonic Order's conquest.

#### **A21.07: Adaptation of indigenous communities in the Canary Islands after the Castilian conquest**

by **German Santana** (Universidad de Las Palmas de Gran Canaria, Spain)

The resistance of the Canarian indigenous population to their conquest by Europeans lasted nearly a century. Following their surrender, most of their culture disappeared. The indigenous population fell sharply although many survived. It became part of the new colonial society during the fifteenth and sixteenth centuries, adapting to a new economy and culture. Its contribution to the development of the new Canarian society was through different key elements: Toponymy, food, ceramics, habitats, land ownership, etc. What is indisputable today is that a significant percentage of the new society was indigenous. They even participated in other conquest expeditions in Africa and America, in the service of the Spanish.

The presence of indigenous heritage was not the same in all the islands. The trauma for survivors was enormous due to the loss of their religion, their worldview, their social order, their language and even their freedom. The relevance of this process is that the Canary Islands served as a laboratory for similar processes in the conquest of Latin America.

#### **A21.08: Networks of renegotiation and resistance: Indigenous communities in the conquered landscapes of the Caribbean**

by **Angus Mol** (Leiden University, The Netherlands), **Corinne Hofman** (Leiden University, The Netherlands), **Menno Hoogland** (Leiden University, The Netherlands), **Roberto Valcárcel Rojas** (CITMA, Cuba)

The Caribbean was the centre stage of the first encounters between the New and Old Worlds, the repercussions of which are woven into the fabric of modern multi-ethnic Caribbean society. Yet, our understanding of this important chapter in history is sorely inadequate, because there are large gaps in our knowledge of indigenous responses to European colonisation. NEXUS 1492, an ERC-synergy funded programme (host: Leiden University, the Netherlands) provides a new view of this neglected episode.

This paper focuses on how three indigenous Caribbean communities renegotiated, adapted and integrated their social networks in the face of encounters with colonial powers, based on (material) evidence for changing trade practices. The site of El Cabo in the south-eastern Dominican Republic took part in the earliest (15<sup>th</sup>–16<sup>th</sup> century) indigenous-European interactions. Chorro de Maíta, an encomienda community in north-eastern Cuba, exemplifies the first phase of colonial rule. Argyle, St. Vincent, represents the last phase of indigenous resistance to colonial powers in the late 17<sup>th</sup> century Lesser Antilles. These indigenous communities, all located at the fringes of colonial networks, differed greatly in their responses to the European presence in the region. Network science models provide a contrasting perspective on indigenous experiences of these conquered landscapes.

#### **A21.09: Responses to Colonialism in a Native American Village in Southern California**

by **Richard Ciolek-Torello** (Statistical Research, Inc, USA), **Donn Grenda** (Statistical Research, Inc, USA), **John Douglass** (Statistical Research, Inc., USA), **Seetha Reddy** (Statistical Research, Inc., USA)

Indigenous peoples' responses to colonialism have been highly varied through time and space. These responses are evidenced in the archaeological record by material culture, food remains, and burial practices. We report on the Gabrielino of the Ballona Wetlands in west Los Angeles to Spanish conquest in the late 18<sup>th</sup> century, a Native American group that resided on the coast of southern California and came into contact with Europeans when Spain established

Missions San Gabriel and San Fernando and the pueblo of Los Angeles between 1769 and 1797. In the past, evidence regarding the impact of Colonialism on Native Americans in southern California has derived from Natives residing at missions, ranches, or other Spanish settlements. The Colonial period assemblage from the Ballona, however, is from an isolated aboriginal settlement occupied contemporaneously with the Spanish settlements. Rather than simple conquest and acculturation to Hispanic lifeways, this evidence suggests a process of ethnogenesis took place, in which a new and distinctive cultural identity developed through hybridization with neighboring Native groups and Hispanic colonists. Evidence from prehistoric sites in the Ballona also provides a long-term perspective that places the changes brought about by Colonialism against a background of long-term adaptation.

#### **A21.10: A Slave who would be King: Oral Tradition and Archaeology of the Recent Colonial Past**

by **Gerry Wait** (*Nexus Heritage, UK*)

#### **A Slave Who Would be King: Oral Tradition and Archaeology of the Recent Past in a Portion of the Upper Senegal River Basin**

Gerald Wait Nexus Heritage, UK

The Sabodala region lies in the hills of eastern Senegal. Sparsely populated for most of the Neolithic, the region witnessed an influx of people primarily from the east and north late in prehistory, which has remained in place today. The immigration into an area of marginal agricultural productivity seems to be a response to social and political regional dynamics focused around slaving and artisanal gold mining. The situation provided opportunities for mercenaries to usurp power. One such person, Tobri Sidibe, is remembered in the oral tradition as a slave who became king of a small polity contemporary with but claiming some independence of the French Colonial powers based in Dakar and more locally at Kedougou. Recent archaeological investigations discovered a site which some local residents associate with Sidibe. Combining oral traditions with the archaeological evidence provides insight into the structure of such West African polities as well as demonstrating the effect that oral traditions have on the way current residents view their past.

#### **POSTERS**

#### **A21.01-P-3: Taphonomy and Traceology of Animal Bones From the village Staświny Sites 1 and 73 in the Masurian Lakeland (NE Poland)**

by **Krish Seetah** (*Stanford University, USA*), **Aleks Pluskowski** (*University of Reading, UK*), **Daniel Makowiecki** (*Nicolaus Copernicus University, Poland*), **Jerzy Sztarbala** (*University of Warsaw, Poland*)

During excavations led in 2011-2012 as a part of research project *The Ecology of Crusading* (conducted by the University of Reading UK), anthropogenic deposits originating from the Early Iron Age, Migration Period and Middle Ages were uncovered. This deposits provided a significant amount of osteological material. Greater part of it formed post-consumption animal remains with a few objects made from bones and antlers. The paper is chiefly of methodological character. It focuses on culinary manufacturing processes and reconstruction of activities as well as on selection of the tools used for manufacturing bone products and for butchery purposes. The main source of information about the origin of traces are the remains of manufacturing process which have to form of mechanical micro-damages visible on the surface of bones which have been identified during micro- and macroscopic observation.

All analyses are based on observations of the processes which are currently taking place in nature (studying bones from inhabited predators' lairs, observing bones which were exposed to different weather conditions for a long period of time). We have also taken into consideration the outcomes of experiments with the use of contemporary bones and iron tools. The data was later verified against fossil bones.

#### **A21.02-P-3: Impact of Rome at the Danube's Mouth: The Nord-Dobrudja (South-East Romania) Rural Communities as a Case Study**

by **Margareta Simina Stanc** ("*Alexandru Ioan Cuza*" *University Iași, Romania*), **George Nutu** (*Institute for Eco-Museum Research, Romania*)

The presence of Rome at the Danube's Mouth shaped the original landscape. The Roman introduced a system of rural settlements composed of colonists and *veterani*. Some of these new communities were built in place of former *Getae* settlements. *Vici* and *villae* were built in an area already connected to the Mediterranean world throughout the Greek colonies from the West Pontus.



There are interesting issues concerning the local communities and their resilience as well as the transformations occurred in their material and spiritual life. Archaeological findings from the Northern Dobrudja rural areas denote strong connections with wide areas from the Aegean and Mediterranean basins. Besides imported products, the local production of different goods (pottery, bone and horn carving) begins to develop. Local resources of iron ore were exploited, indigenous animal breed were improved and workshops for producing building materials were expanded.

There is archaeological evidence documenting the resilience of local traditions, mirrored especially in the pottery influenced by La Tène, discovered in the same contexts with Roman pottery. Although all main aspects of Greek-Roman pantheon were embraced, some discoveries confirm the endurance of local deities.

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## Session A22

### Interregional contacts during the first millennium B. C. in the Europe

Thursday, 5 September 2013, 14:00–18:30

Room: UU 405 (Building 2, 4th floor)

**Organisers:** **Martin Trefný** (Museum of the Říp mountain region and University of West Bohemia in Pilsen, Czech Republic) and **Giovanna Bagnasco Gianni** (University of Milan, Italy)

The proposed session is focussed on the presentation of problems regarding the mutual interregional contacts and their interpretation during the late Bronze Age and the Iron Age in Europe. These problems have already been in the past the subject of significant studies. A substantial part of them, however, was focused on the relationships between the developed areas of the ancient Mediterranean and the cultures of the transalpine Europe. In spite of the fact, that these issues constantly represent the important part of such studies, the proposed session could aim also on various forms of the relationships between for example individual regions of Celtic Europe, as well as between significant culture areas of the ancient Mediterranean. Such proposal aims not only to study the interrelations between the developed „Mediterranean South“ and the „barbarian North“ but also between any European regions, which show a certain level of such connections. This concept thus allows us to study the interregional contacts on many other levels, than only on the basic of the dual division stated above. Such concept at the same time understands Europe of the first millennium B. C. as a unique region of various civilizations or cultural groups with frequent mutual contacts and influences affecting their everyday life.

#### **A22.01: Late Bronze Age exchange and interaction in the northern Circum-Alpine region : Not only across the alps.**

by ***Ben Jennings*** (*University of Basel, Switzerland*)

Studies of Late Bronze Age exchange and communication networks in the northern Circum-Alpine region have typically focused on routes across the Alps and the circulation of high-value manufactured goods from the Italian peninsula to central Europe. The northern Alpine lake-dwelling settlements of Switzerland, southern Germany and eastern France appear to have been significant regional metalwork manufacturing centres, circulating objects to different areas of Europe – some studies have even discussed the diffusion of Pfahlbaubronzen to the north of Europe. The regional and inter-regional contacts and paths of communication utilised by the lake-dwelling communities have been elucidated through the analyses of many different forms of material culture found within these settlements and the surrounding areas. Patterns of cultural incorporation and rejection extending as far as southern Scandinavia, and patterns of individual mobility indicate that the exchange networks were not only about the transport of objects from the 'developed south' to the 'barbarian north', but primarily about regional interaction within the relatively similar cultural regions of Europe north of the Alps.

#### **A22.02: Intercultural contacts at the end of Early Iron Age in the northern periphery of the Thracian world**

by ***Dragoș Măndescu*** (*Arges County Museum, Romania*)

During the late period of the first Iron Age, at the northern edge of the Thracian world, in the foot hills of the Southern Carpathians (South-Central nowadays Romania) appears and develops a unitary archaeological culture known as Ferigile, according to the most important necropolis discovered in eponymous locality. We know this culture particularly through cemeteries consist of cremation graves under small barrows. It evolves continuously over three centuries, from the 7-th c. until the 5-th c. BC. Apparently it seems to be a isolated culture, secluded into a well-delimited territory, but a close look reveals a number of influences and intercultural contact received from various areas, sometimes from considerable distances. Weapons and harness parts, deposited in abundance in graves, have a definite Eastern influence, namely Scythian. Various adornments have the best analogies in Western Balkan Illyrian space or even in the Eastern Alpine area. Ceramic pottery has affinities with Thracian south of the Danube pottery. Some vessels, though handmade, imitating Greek wheel-made forms. Internal analysis of this archaeological culture revealed that these influences were perceived successively as their home areas were in a phase of strong affirmation or cultural expansion.

#### **A22.03: Enlightening identity: Reconsidering burial practices in Lychnidos region from the Iron age until the end of the Hellenistic period**

by ***Pero Ardanliev*** (*NI Museum of Macedonia-Skopje, The former Yugoslav Republic of Macedonia*)

Early antiquity in the Lychnidos area is still a hot research topic for more than a century, beginning with the discovery of princely graves of Trebenishte. The wider geographical context of the region, placed between three possible ethnical

groups – Macedonian, Illyrian and Epirotic – always held a special interest as an important place in regards to the interregional contacts among different Balkan cultures. The first political entity connected to the area around Lake Lychnidos are the mythical Ecnhelei, which later fall in obscurity and are followed by the historical Dassaretae, whose name and existence, apart from the literary sources, is recorded in both epigraphical and numismatic evidence. Academic theories are mainly divided in two groups: one holding that both tribal names are simply different terms used to describe same group of people; the other differentiating between them and claiming separate identity, present throughout discontinued time periods. To get out of this predefined framework in order to solve the problem, we will try to reconstruct the past by utilizing the clues left by those who forever remain silent – the dead.

#### **A22.04: Between Po plain and middle Danube Urnfield cultures: Codroipo and the Friulian plain in XIIIth century BC**

by **Giovanni Tasca** (*Università di Padova, Italy*), **Cristiano Putzolu** (*Università di Padova, Italy*), **David Vicenzutto** (*Università di Padova, Italy*)

Between middle and late Bronze Age some fortified settlements flourished in the Friulian plain (North-eastern Italy). Among them, the excavations in Codroipo (2004-2012) show for the first time in Friuli the local cultural evolution of the pottery between 13th and 12th century BC (BzD-HaA1) founded in the stratigraphic sequence.

The pottery of the first phase of the site (13th century BC) shows important cultural relations with the Po Valley even if with original local elaborations. In the second phase (early 12th century BC), the pottery, still following Veneto stylistic evolution, receives in a significant way the main stylistical set of the middle Danubian ancient phase of Urnfield (Ha A1). To the same cultural area belong the only three pins recovered (Keulenkopfnadeln). This phase moreover corresponds to a wide structural renovation of the village.

In the stratigraphic sequence, the third phase of the site marks the very beginning of the Final Bronze Age 1 (late HaA1) with a rich set of samples of vases which have comparison in Slovenia and Veneto.

Therefore the site gives the systematic stratigraphic association between the pottery typological evolution of Veneto area and Middle Danubian area in Early and Ancient Urnfield period (BzD-HaA1).

#### **A22.05: Tarquinia and the North**

by **Martin Trefný** (*University of West Bohemia, Czech Republic*), **Giovanna Bagnasco Gianni** (*Università degli Studi di Milano, Italy*), **Alessandra Gobbi** (*Università degli Studi di Salerno, Italy*), **Claudia Piazza** (*Sapienza Università di Roma, Italy*)

The present contribution concerns the evidence of objects imported from or influenced by the northern regions (Northern Italy, Central Europe), identified in Tarquinia. The aim is to reconstruct the invisible aspects of cultural transmission through selected case studies, considering evidence from the necropolis and the settlement (monumental complex). A second goal is to make clear the role of Tarquinia as contact point towards Southern Italy, acting as a conduit for the transfer of northern influence in the wider framework of the relationship between Etruria and Campania.

The first case study regards the Central European iconographies such as the "bird protome", "sun bird", "sun boat" and water birds in the pottery of the 'monumental complex' of Tarquinia during Late Bronze Age and Orientalising period. Second case study concerns possible link of such iconographies with the cosmological issues recently identified in the orientaling Bocchoris tomb of Tarquinia, connected to Central Europe through a peculiar typology of bronze cups.

The second part is dedicated to the evaluation of some finds of "northern" fibulae (7<sup>th</sup>-5<sup>th</sup> century BC) from the 'monumental complex', which may help to reconstruct the directions of the interregional contacts routes. The contribution discusses also other typologies of the Tarquinian bronzes to enlighten affinities and differences with the contemporary products of the Central European area and that of the Hallstatt culture. Such comparisons are very helpful in studying the interregional relationships between the central and southern parts of Europe.

#### **A22.06: From North to South: lures, axes and shields in ritual deposits from Denmark and Sweden and the Etruscan evidence of the lituus from Museums and votive deposits**

by **Nora Petersen** (*National Museum of Denmark, Denmark*)

The votive deposit from the sacred area in Tarquinia contained three bronzes – the so-called lituus-trumpet (*tromba-lituo*), an axe and a shield – making it so far a unique example in the Etruscan world. Whilst looking up north, however, one finds several analogous examples of these three specific bronze artefacts. They exist mostly in Denmark and Sweden.

On rock carvings the bronzes are depicted together; men are shown blowing lures, carrying ritual axes and shields. In Denmark and Sweden, one also finds lures, axes and shields in ritual deposits in bogs. Here, some of the bronzes were damaged to the point of defunctionalisation before they were deposited in the sacred context. The same act of defunctionalisation of the objects is recognisable in the votive deposit at Tarquinia.

The purpose of this presentation is to compare the Scandinavian examples of lur, axe and shield with the unique Etruscan example from Tarquinia and thus hopefully understand their significance.

#### **A22.07: Contacts ... and what? Later Iron Age Bohemia in light of Mediterranean relations**

by Jan Kysela (Charles University Prague, Czech Republic)

The focus of the presentation will be the changeable relationships between the Mediterranean and the Transalpine worlds in the middle and late Iron Age (ca. 4th–1st c. B.C.). Various relations are signalled by imported and imitated objects as well as by transfer of ideas and technologies. On the example of Bohemia will be illustrated the nature, dynamics and local repercussions of these sometimes overestimated but still extremely significant contacts. Given the extension of the topic, the paper will concentrate on three aspects documented on precise examples: 1) the question of the visibility of contacts will be documented on the faunal and herbal remains, a category little investigated in this respect. 2) the limits of historical interpretation will be presented on the example of coins and 3) some snags of a too linear the archaeological evaluation will become evident by comparison of Bohemia with its two neighbouring regions.

#### **A22.08: Contacts between Late Hallstatt Groups of Pannonian Basin, South-East Alpine Hallstatt Region, and Venetians as Reflected by Horse Burials**

by Petra Kmeťová (Faculty of Philosophy, Comenius University, Slovak Republic)

Horse burials of the late Hallstatt Vekerzug culture of the Pannonian Basin were traditionally associated with the influences from the East, namely from the North-Pontic and Caucasian region. The situation, however, seems to be less simple. Recent research revealed a polygenetic character of this culture, with elements rooted in several different regions. Horse burials in separate pits which were located in human cemeteries represented a new element within a frame of cultural groups of the Pannonian Basin. The detailed study of these burials revealed close links to the regions further to the southwest, namely to the Southern Pannonian Late-Hallstatt groups and some South-East Alpine Hallstatt groups, and even to North-East Italy (Venetians). In addition to the character of separate horse burials, the existence of these contacts is also suggested by the occurrence of an unusual type of buried horse remains as well as by analogous finds of horse-harness components from horse graves that link these regions. Similar character of horse burials in these regions allows us to presume that trade- or exchange-contacts between them could have been accompanied also by the transfer of ideas and even of similar burial rituals related to horses.

#### **A22.09: Mixing Well Together: Middle Iron Age interregional interaction in the Southern Carpathian Basin**

by Attila Gyucha (Hungarian National Museum, Hungary), Béla Török (University of Miskolc, Hungary), Peter Barkóczy (University of Miskolc, Hungary), Árpád Kovács (University of Miskolc, Hungary), Gyöngyi Gulyás (Ásatárs Kft., Hungary)

During the Middle Iron Age, the Danube – Tisza – Sava – Drava region in the southern part of the Carpathian Basin was contact zone for several major cultural groups of fundamentally different origins and traditions. The Great Hungarian Plain was characterized by the easternmost occurrence of Scythian style material culture, Northern Transdanubia was occupied by the easternmost Hallstatt groups. Southern Transdanubia and the Drava – Sava interfluvium may primarily have been inhabited by Illyrian and Venetic tribes.

In this paper, we examine the nature, intensity and direction of contacts between cultural units in the region during the Middle Iron Age. We use analyses of a unique burial assemblage containing iron weapons recovered in the southwestern portion of the Great Hungarian Plain as a case study. The archaeometallurgical investigations revealed that, in addition to the funerary rite and the typological composition of the weaponry, the forging methods and the microstructures of the iron weapons also indicate intensive interactions and shared traditions of the contemporary neighboring cultural units in the contact zone.

By integrating these results into a broader geographical context, we provide an interpretation of the interaction patterns in the Carpathian Basin during the Middle Iron Age.

## POSTERS

### **A22.01-P-2: Foreigners in the early/late Bronze Age south-east Paris Basin's necropolis (14th–11th c. B.C.): An archaeo-anthropological point of view**

by **Mathilde Cervel** (EPHE, France), **Stéphane Rottier** (Université Bordeaux 1, France)

The notion of contacts and exchange will be discussed for the Paris Basin (France), during the early-late Bronze Age (15<sup>th</sup>–11<sup>th</sup> c. B.C.). This geographical region is convenient for this theme since it lies at the junction of several major European cultural currents. This chronological period is the theater of cultural changes such as the development of incineration.

In his PhD dissertation, S. Rottier conducted an archaeo-anthropological study of two sites in the southeast of the region. On the one hand, he showed that some individuals come from abroad, as far as southern Germany. On the other hand, he proposed that an uxorial social organization existed at this period.

Following his work, the current researches focus on 8 sites located in the Southeastern Paris Basin. By studying specific genetical discrete traits and the morphology of this population linked with archaeological data, three aspects will be broach: the homogeneity of the population, the possible presence of foreigners and their social position in this society. It will lead us to discuss the possible interregional connections in Europe.

### **A22.02-P-2: Between East and West: Early Iron Age burials from Transylvania and their interregional contacts**

by **Alexandra Ghenghea** (Institute of Archaeology "Vasile Parvan", Romania)

The Late Early Iron Age from Transylvania is mainly represented by the Ciumbrud burial pattern. The lack of settlements, the burial ritual and some grave goods items were considered an argument for the cultural identification of the Ciumbrud type discoveries with Herodotean Scythians. However, other scientific opinions question this traditional view, considering this group as local. There are some finds from burials that undoubtedly witness a North-pontic provenience, but others are of a Balcanic origin. The Posmuş type of daggers has its earliest analogy faraway in Siberia, but specific types of brooches are to be encountered in various regions of Balkans. Was there an exchange system of goods from long distance? Was there a nomadic invasion as some view points within archaeological literature already suggested or was there a preference for particular objects and for a certain type of technology as the Posmuş type of daggers may show? How and where may be placed this funeral group within a larger interregional context?

## Session A23

### Landscapes of complexity in Bronze Age central Europe

Friday, 6 September 2013, 08:30–18:30

Room: EP 120 (Building 1, ground floor)

**Organisers:** **Timothy Earle** (Northwestern University, USA), **Viktória Kiss** (Hungarian Academy of Sciences, Hungary), **Gabriella Kulcsár** (Hungarian Academy of Sciences, Hungary) and **Vajk Szeverényi** (Móra Ferenc Múzeum, Szeged, Hungary)

Settlement systems and associated cemeteries have always been important targets of prehistoric archaeological research in central Europe. In most of the 20th century, however, interest focused primarily on cemeteries, large central sites, tells and fortified settlements. In the past decades a fundamental change in regional studies has occurred in central Europe: settlements are now rarely investigated in isolation and emphasis is often placed on settlements within a wider micro-region. This approach seems to be especially promising in the research on the Bronze Age in central Europe, where societies created increasingly complex networks of settlements.

Emphasizing theories with top-down dynamics, researchers have thought these regional polities to be characterized by hierarchical political economies whereby elites controlled key elements of subsistence, production, exchange and distribution of specialized goods, and/or ritual knowledge. Another strand, emphasizing bottom-up dynamics, however, has shifted to investigating the role of everyday people using concepts of practice, agency, memory and ritual in political and identity formation processes, and the role of landscapes creating socially meaningful lives. Central Europe provides ample evidence for emergent complex societies in the Bronze Age with significant wealth differences in cemeteries, two or three-tiered settlement hierarchies, and emergent craft specialization.

Understanding various aspects of the use of the landscape – through dwelling or any other activity – is possible only through well-designed research projects. The aim of our session is to provide an opportunity to present relevant research results as well as methodological improvements, with an emphasis on issues like the identification of political centers and integration, differences in settlement types and activities, political processes, the ideational aspects of landscape, mortuary landscapes, ritual and society in the Bronze Age of central Europe.

#### **A23.01: Bronze Age Landscapes in the Benta Valley (Central Hungary): Research on the Hinterland of Bronze Age Centres**

by **Timothy Earle** (Northwestern University, USA), **Viktória Kiss** (Research Centre for the Humanities, Hungarian Academy of Sciences, Hungary), **Gabriella Kulcsár** (Research Centre for the Humanities, Hungarian Academy of Sciences, Hungary), **Vajk Szeverényi** (Móra Ferenc Múzeum, Hungary), **Tamás Polányi** (Northwestern University, USA), **Janusz Czebreszuk** (Adam Mickiewicz University, Poland), **Mateusz Jaeger** (Adam Mickiewicz University, Poland), **Łukasz Pospieszny** (University of Gothenburg, Sweden)

The Benta Valley Project is part of the Százhalombatta Archaeological Expedition. This international project focuses on the excavation of a tell settlement at Százhalombatta, one of the central sites in the Middle Danube Valley. During this work it was decided that it would be equally important to study Bronze Age settlements in the hinterland – the Benta Valley – to gain new insights into the period's socio-economic organisation. The survey of the valley began in 1998. Between 2003 and 2007, the second phase of work sought to determine the different site types and the nature of their occupation. Preparations for the third phase began in 2012. Our goal was to conduct a magnetometer survey on different types of settlement, and based on these we targeted areas for household excavation. We investigate if differences existed between the regional and micro-regional settlement patterns during successive periods of the Bronze Age; if genuine centres and specialised settlements existed here in the Bronze Age; how a community's cultural background influenced landscape use in a particular region; how social and political organisation is reflected in cemeteries. In our paper we will present the preliminary results of the last phase of the project.

#### **A23.02: Settlements – Stone Tools – Specialization: A Comparative Analysis of Stone Tools and Society in the Hungarian Early and Middle Bronze Age – A Preliminary Study**

by **Annamária Priskin** (Móra Ferenc Múzeum, Hungary)

The aim of my paper is to present the first phase of a research which investigates Bronze Age society in Hungary based on lithic tools technology, specialization and the utilization of raw materials. In the late 1990s the Százhalombatta Archaeological eXpedition (SAX) and the Benta Valley Projects were started in central Hungary in order to analyse the social and economic organisation of an Early and Middle Bronze Age society (2300–1500 BC) through micro-regional

settlement research. The settlement structure of the valley has a complex hierarchy, which may suggest a complex, hierarchical, chiefdom type society. In this type of society important questions about political power include what was the level of craft specialisation, and who controlled the specialists and the circulation of local and exotic raw materials.

During my research I analyse chipped stone artefacts from eleven Early and Middle Bronze Age settlements, which included one hilltop and many horizontal settlements. I analyse the lithic tools in terms of typology, technology and the utilization of raw materials. The results may provide new information on the function of each settlement within the settlement network and the organization of the manufacture of lithic tools.

#### **A23.03: Bronze Age Landscapes East of the Danube in Central Hungary**

by **Gabriella Kulcsár** (*Research Centre for the Humanities, Hungarian Academy of Sciences, Hungary*), **Mateusz Jaeger** (*Adam Mickiewicz University in Poznań, Poland*)

In the past few years it became possible to intensify research on the Bronze Age settlement structure in the Kakucs microregion. This area, located some 40 km southeast of Budapest, witnessed intense cultural and settlement processes in the Middle Bronze Age. This is attested to by a considerable number of archaeological sites associated chronologically with the entire development cycle of the Vátya culture and an accumulation of settlements of defensive nature. In our paper we will present the preliminary results of the current phase of the Kakucs microregion project and the perspectives of this international collaborative research program. The presented project is an element of a broader programme of research on the Landscapes of Complexity in the Central Carpathian Basin along the Danube.

#### **A23.04: Interpretation of Bronze Age Landscape Changes in the Light of New Chronological Dates**

by **László Reményi** (*Hungarian National Museum, Hungary*)

Place and time are the main aspects of the changes of the landscape. Place can be investigated by the archaeological records of the settlement pattern: the settlement system, associated cemeteries and other signs of land use (e.g. dwelling). Bronze Age settlement pattern is fairly well known generally due to new results of archaeological researches, especially microregional projects. However, the framework of Bronze Age chronology was changed in the past decades, especially through radiocarbon dates. The rise of the Bronze Age tell cultures of the Carpathian Basin can be dated to ca. 2300 BC; the end of this period to ca. 1500–1450 BC. But we do not have the full details for the previous period (from the end of the Baden culture to the rise of the Bronze Age tell cultures) and for the next period (after the so called Koszider period, in other words, the early phase of the Tumulus culture, BB2). Traditional complex theories of Bronze Age demography, social and economic change were built on these data. However, these theories have to be reviewed in the light of the new absolute and relative chronological dates.

#### **A23.05: Exploring Different Trajectories in Bronze Age Landscapes: Tell Settlement in the Hungarian Borsod Plain and the Romania Ier Valley**

by **Klara Fischl** (*Miskolc University, Hungary*), **Tobias Kienlin** (*University of Cologne, Germany*), **Liviu Marta** (*Muzeul Județean Satu Mare, Romania*)

Much Bronze Age research is dominated by a top-down approach, i.e. a specific interest taken in the socio-political impact of metalworking and the evolution of stratified society. In this context Bronze Age tell sites of the Carpathian Basin are interpreted as (proto-) urban settlements. In this paper it is argued that this modelling of Bronze Age tell sites – ultimately in likeness of Mediterranean civilisation – involves considerable extrapolation from the archaeological data. Development towards site hierarchies, differentiation in social relations and political ranking often are assumed rather than convincingly demonstrated.

Instead, it can be shown that tell settlement is not a uniform phenomenon – neither in chronological or regional terms, nor in socio-political or cultural ones. There is much variability in settlement size and continuity, internal organisation and architecture as well as with regard to the integration of multi-layer tell sites into wider settlement systems.

Drawing on data from ongoing survey projects of the authors, this will be illustrated by reference to two microregions of the northern and north-eastern part of the Carpathian Basin: the Hungarian Borsod plain, occupied by Hatvan and subsequent (Otomani-)Füzesabony communities; and the Romanian Ier valley occupied by Otomani communities.

### **A23.06: Middle Bronze Age Settlements and Landscapes in the Hungarian Part of the Berettyó & Ér Valley**

by **János Dani** (*Déri Múzeum, Hungary*), **Gábor Márkus** (*Archeodata 98' Bt., Hungary*)

Our paper concerns new research on Middle Bronze Age settlements and landscapes in eastern Hungary. After the initial research at the beginning of the 20th century, the latest excavations at the tell settlements of the area were carried out between 1970s–80s by M. Sz. Máthé. These small-scale excavations concentrated mainly on the central part of the settlements and on their chronological sequence. Consequently, we have information only on the tells and know almost nothing about the external settlement parts and the settlement structure. After the overall survey of Bronze Age tells along the Berettyó-Ér Valley (carried out by K. P. Fischl and J. Dani), we try to approach this theme from other aspects. We used in this research on Bronze Age settlements mainly non-destructive methods: geophysical examination (magnetometric survey), 3D terrain model, aerial photography and systematic site-catchment analysis. In order to know more about the settlement structure in one case, at one site we had the opportunity to carry out rescue excavations. Through the combinations of various methods we try to create a more detailed picture of the Middle Bronze Age tells in the Hungarian part of the Berettyó and Ér Valley.

### **A23.07: Highland–Lowland. Habitat Models and Social-Systems in Middle Bronze Age Central–Northwestern Transylvania**

by **Zolt Molnar** (*Babes-Bolyai University, Romania*), **József-Gábor Nagy** (*Babes-Bolyai University, Romania*), **Zoltán Imecs** (*Babes-Bolyai University, Romania*)

The current paper studies the Middle Bronze Age Otomani and Wietenberg settlement-system along with metal finds from Northwestern Romania and the Transylvanian Plateau. Our aim is to investigate the transformations and dynamics of the settlements through cartographic documents and data relating to the landscape around the sites (using satellite images, aerial photographs and geophysical measurements) stored in a geographic information system. The study of the settlement network of interacting polities is a window on the historical development of social complexity and hierarchy. Thus the undertaken archaeological analysis provides a starting point for our attempt to frame the evolution of the Middle Bronze Age chiefdoms from northwestern Romania and the analysis of their social-political system. Modeling the territories of Central–Northwestern Transylvanian prehistoric communities provides information about the division of space and possible land use strategies. The research is also based on the existing macro regional paleo-environmental data of the aforementioned territory and the neighboring regions. We can state that the Middle Bronze Age chiefdoms form peer polities controlling territories of different scale, but mostly small (well controllable), along single or more valleys. The approach represents the actual stage of research of the subject.

### **A23.08: Reading Regional Identities in the Carpathian Basin Bronze Age: You Can't Judge a Book by its Cover**

by **John O'Shea** (*University of Michigan, USA*)

The understanding of Bronze Age social dynamics in the Carpathian Basin was revolutionized by the widespread adoption of radiocarbon dating, which demonstrated that the Bronze Age landscape was comprised of numerous contemporary groups each producing regionally distinctive fine ware ceramics. The recognition of these regionally distinctive social groups has paved the way for a more anthropological appreciation of Bronze Age societies and interaction, and has drawn attention to the marked differences in the organization of these contemporary groups, which ranges from hierarchically complex polities to laterally organized autonomous villages. More detailed research within these regionally distinctive fine ware zones has revealed surprising variation in the practices and organization of the constituent communities. This, in turn necessitates that we rethink the nature of the social unit or units that are being demarcated. This paper considers the Maros region of Hungary, Romania, and Serbia to better understand what kinds of social units or relations are expressed through the fine ware ceramics of the style first identified by Childe as the Perjamos (Periam) culture.

### **A23.09: Connections and Complexity in Southwest Transylvanian Bronze Age Landscapes**

by **Colin Quinn** (*University of Michigan, USA*), **Horia Ciugudean** (*Muzeul Național al Unirii Alba Iulia, Romania*)

Throughout Bronze Age Europe, trends towards macro-regional integration co-occurred with local processes of interaction among human communities and the landscape. In the Bronze Age of Southwest Transylvania, a region rich in metal ores, these local processes were likely impacted by macro-regional shifts in the prestige and commoditization of metal. However, no previous studies have systematically studied the structure or dynamics of Bronze Age settlement systems in the region.



This paper presents preliminary results from an ongoing regional survey project within southwestern Transylvania, Romania. We employ a new technique of characterizing Bronze Age settlement system topology that combines GIS and social network analyses and allows us to monitor changing connectivity and scale of integration throughout the Bronze Age. The results provide a particular case of the development of settlement systems in resource procurement zones that can contribute to our understanding of the long-term trajectories of social complexity in Bronze Age Europe.

### **A23.10: The Talking Dead: Introducing Middle Bronze Age Mortuary Customs to the Settlement Pattern of the Lower Körös Basin**

by **Paul R. Duffy** (*University of Toronto, Canada*), **Györgyi Parditka** (*Hungarian National Museum, Hungary*)

Our recent fieldwork in the Lower Körös Basin of eastern Hungary has shown that despite a population increase and agricultural intensification in the Middle Bronze Age there is little evidence for social inequality. This finding raises the question whether people in the Otomani/Gyulavarsánd region, unlike neighbouring areas, rejected increases in social inequality during the second millennium BC. We address this question by examining preliminary findings from a Middle Bronze Age cemetery now under excavation in eastern Hungary. These findings are presented in the context of other mortuary customs from the Great Hungarian Plain, and discussed in light of micro-regional settlement patterns.

### **A23.11: Invisible Rituals: Investigations at the Bronze Age Cremation Cemetery of Kajászó, Hungary**

by **Tamas Polanyi** (*Northwestern University, USA*)

Although regional studies rely on unbiased sampling, different formation processes and physical parameters of archaeological sites often become limiting factors of research design neglecting sites with low surface visibility. Bronze Age cremation cemeteries, lacking detectable surface features, are notoriously difficult to locate and are found only by accident. In this paper I will explore how methodological limitations of archaeological survey cripple systematic regional, contextual and comparative cemetery studies affecting our perception of mortuary ritual. Ahistorical and decontextualized burial analyses lead to narratives of 'culturally' uniform mortuary practices, misshaping our understanding of ritual as a powerful conventionalizing and controlling medium, where liturgy is seen as merely a static portrayal of cultural rules and grammars. I present my research at Kajászó, developing a research protocol to locate and map Bronze Age cemeteries. I argue that a protocol that enables regional cemetery pattern studies alongside well-established research on settlements would facilitate the assessment of funerals as a contingent and transformative social domain. Viewing cemeteries as sequences of interrelated burial events, a diachronic study of death rituals will help reveal how ritual practitioners engage in social discourse furthering our analytical repertoire of social change.

### **A23.12: The Relationship of Settlements and Burial Grounds in the Early Bronze Age in Southwestern Slovakia**

by **Peter Tóth** (*Archaeological Institute of Slovak Academy of Sciences, Slovak Republic*), **Jozef Bátora** (*Archaeological Institute of Slovak Academy of Sciences, Slovak Republic*)

In the Early Bronze Age in southwestern Slovakia an interesting phenomenon can be observed. Cultures here are mainly known from burial grounds. A typical example is the Nitra culture. Even a long term systematic field survey focused on locating the nearby settlements was not quite successful. The ratio between settlements and burial grounds is more balanced from subsequent Únětice culture. Burial grounds are located next to the settlement. A different situation was observed at the end of the Early Bronze Age, during the Maďarovce culture, which is known mostly from settlements. Burial grounds are located 400–1000 m south, southwest and southeast of the settlements.

Data gained from field surveys and archaeological excavations was used to build culture specific models of the relationship between settlements and burial grounds, which were verified using geographical information systems and statistical methods. Through the combination of these instruments we seek the missing components (either settlements or burial grounds). Our hypothesis is based on the assumption that local communities buried their dead on burial grounds very close to settlements. This way the right to the territory was demonstrated, what could lead to long term spatial stability in the region.

### **A23.13: Questions of Settlement Hierarchy and Political Economy in Central Transdanubia**

by **Viktória Kiss** (*Research Centre for the Humanities, Hungarian Academy of Sciences, Hungary*)

During the mid-20th century several anthropological models of early societies were constructed: Elman Service's model (band-tribe-chieftom-state), and models for ranked or middle-range societies. These models could be used for the interpretation of regional political organisation of the Middle Bronze Age populations in the Carpathian Basin.

This paper concerns the social system of Transdanubian Encrusted Pottery, namely whether it can be associated with a more developed form of tribal system or whether it can be categorized under chiefdom-type polities. The multi-level settlement system and rare burials with status symbolizing objects, along with the Tolnanémedi type bronze and gold hoards indicate the presence of a local elite, and suggest a development towards chiefly stratification. Nevertheless, at the same time no evidence exists for the control over economic resources (regarding metallurgy or pottery production) which is often associated with stratified societies. The main attributes of chiefdoms – evidence for redistribution at religious, economic or political centres – have not yet been found. It is also unclear due to the available sparse data on settlement structure, if the distinct settlement types are connected to a real hierarchy or whether these sites are only the results of different land use and functional discrepancies.

#### **A23.14: Complex Societies Build Complex Landscapes. The Case of the Early Bronze Age Bruszczewo/Łęki Małe Structures in Great Poland.**

by *Janusz Czebreszuk* (Adam Mickiewicz University in Poznań, Poland), *Mateusz Jaeger* (Adam Mickiewicz University in Poznań, Poland)

Years-long excavations in Bruszczewo and its vicinity brought to light evidence of a developed settlement structure consisting of a central, strongly fortified village, open settlements, unique “princely graves” and hoards.

According to absolute chronology the settlement in Bruszczewo and its vicinity lasted for ca. 300 years and strongly influenced the local environment and landscape. The perfectly preserved fortifications from the peat zone of the site testify to the large-scale use of wood. Pollen analysis, a wide set of palaeobotanical data and osteological remains confirm the existence of a model of economy based on intensive farming and husbandry.

All the finds gathered so far in the Bruszczewo microregion clearly point to the existence of complex Early Bronze Age societies of the Únětice culture. It can be even stated that we are dealing with the presence of a proto-state structure based on the succession of social position and power. The multiaspectual, stable and intensive activities of the local Early Bronze Age communities are related to strong human impact on the natural environment. Interdisciplinary research carried out in the Bruszczewo microregion revealed important information about the process and relation between the development of cultural landscape and the degradation of the natural environment.

#### **A23.15: The Emergence and Dynamics of Early Bronze Age Landscapes of the Polish Lowland**

by *Lukasz Pospieszny* (University of Gothenburg, Sweden), *Jakub Niebieszczański* (Adam Mickiewicz University, Poland)

Around 2000 BC the lowlands of today northern Poland were the outskirts of a rising Early Bronze Age civilization. Nevertheless spectacular examples of primary bronze metallurgy, hoards of metal objects and rich tumulus burials (*Fürstengräber*) are known from this area. They were the outcome of both rapid and long-term socio-ideological changes. In our paper we explore those processes by analyses and interpretations of a spatial ordering of ritual activities in two selected regions.

The first of them, Kujawy, was settled by a modest population representing the Proto-Únětice culture. Surprisingly, after their arrival the rate of socio-economic development of the region has declined. The second, Kościan Plain, was colonised by fully formed societies of the Únětice culture. Their advanced social institutions were materialised in the form of fortified settlement in Bruszczewo and a barrow cemetery in Łęki Małe.

In both regions the cemeteries and places of offerings were clearly linked with natural features of the landscape and traces of older ritual practices. To examine this relationship at the macro level we have initiated a pilot research project in which the phenomenological approach is integrated with GIS analyses and modelling.

#### **A23.16: Landscapes of Complexity in Bronze Age Central Italy**

by *Katia Francesca Achino* (Universitat Autònoma de Barcelona, Spain), *Letizia Silvestri* (Durham University, UK), *Mario Federico Rolfo* (Università di Roma ‘Tor Vergata’, Italy)

Bronze Age Central Italy shares a wide range of similarities with Central Europe; such affinity is not only related to the archaeological situation itself: in fact, also the studies of later Prehistory in Central Italy have been affected by multiple methodological and interpretive gaps.

More in detail, the obviousness and symbolic appeal of caves has led to an excessive – yet, often superficial or inconclusive – focus on their archaeological deposits; this overestimation went to the expense of a more rational and sys-

tematic application of planned surveys and excavation of open sites. Therefore, also the recognition of networks\hierarchies between sites and communities is currently still lacking.

This paper will provide a contextualised and critical synthesis of the existing knowledge about Middle Bronze Age sites in Central Italy, proposing ways forward to the identified issues; in addition, it will introduce a micro-regional study which integrates cave excavations, field surveys and the investigation of a key open site.

Such means will allow the Bronze Age landscapes of complexity in Central Italy to be identified and eventually put in context; this will improve our understandings of the communities who lived in this region, which is still full of potential.

#### **A23.17: Western Syrmia in the Middle and Late Bronze Age (17th–12th BC)**

by ***Daria Loznjak Dizdar*** (*Institute of archaeology, Croatia*), ***Sanjin Mihelić*** (*Archaeological Museum Zagreb, Croatia*)

The area of Western Syrmia was densely populated in the Middle Bronze Age and at the beginning of the Late Bronze Age. With numerous settlements and the two southernmost hoards of the Koszider horizon were discovered there. This area is further interesting due to certain perceived regularities used by Bronze Age communities in selecting positions for settlements, some of which are of the *tell* type, whereas others were clearly smaller and of shorter duration. The finds of the Szeremle group and the Vatin culture, as well as, a little later, the newly formed Belegiš I culture, bear witness to intensive communications taking place in this area at the beginning of the Middle Bronze Age, positioning the area at the border of sorts between the Southern Pannonian circle and the cultural groups of Transdanubia of the time, which in a way explains the presence of the southernmost Middle Bronze Age hoards of Lovas and Vukovar. Western Syrmia provides an interesting example of how the Danube, as a Central European communication route, conditioned the formation of central settlements on loess plateaus and how larger settlements were distributed in the hinterland as part of a regional communication network.

#### **A23.18: Settlement and Society in the Late Bronze Age of Southeast Hungary: Csanádpalota-Földvár and Its Hinterland**

by ***Vajk Szevevényi*** (*Móra Ferenc Múzeum, Hungary*), ***Péter Czukor*** (*Móra Ferenc Múzeum, Hungary*), ***Annamária Priskin*** (*Móra Ferenc Múzeum, Hungary*), ***Csaba Szalontai*** (*University of Szeged, Hungary*)

Recent research has demonstrated that around 1300–1100 BC, the southern part of the Great Hungarian Plain (Csongrád and Békés counties in Hungary, Arad and Timiș counties in Romania) is characterized by the emergence of a series of massive fortified settlements (e.g. at Cornești, Sântana, Orosháza, etc.). This substantial change in settlement patterns – the appearance of a two or three-tiered hierarchy – indicates important social and economic transformations in the region, the nature of which, however, remains unknown yet. The function of these settlements is also debated to some degree, as they have not yet yielded substantial domestic remains, and their interpretation as refugia or ritual centres is also possible.

The aim of our article is to describe the recently investigated fortified site in the vicinity of the town of Csanádpalota, on the border between Hungary and Romania. We will report the results of the archaeological, botanical and zoological analyses of the excavation. Furthermore, we will examine its relationship to the contemporary settlements in its hinterland on one hand, and the contemporary fortified settlements in the wider region on the other. With the help of various GIS analyses we will sketch various possibilities to delineate Late Bronze Age polities and analyze their structure and socio-political make-up.

#### **A23.19: Landscape of Everyday Life – Case Study Přešlavice, Moravia**

by ***Klára Šabatová*** (*Masaryk University, Czech Republic*)

This paper is based on a complete work on a large plane settlement area of Middle to Late Bronze Age in Přešlavice, Moravia, which represents the Tumulus culture and the beginning of “Lusatian” Urnfields in the area. Settlement components that are connected in time and space with residential, burial, economic, storage, industrial and refuse functions are defined. The site is understood as a landscape of everyday life, as a farm settlement connected to the central sites in the wider micro-region. The necessity of studying plane settlements in order to understand cultural development in the context of traditional meaning and methodological aspects of statistical and spatial analysis will be discussed.

### **A23.20: Bronze Age Landscapes of Northeastern Slovenia and their Complexity**

by **Špela Karo** (*Institute for the Protection of Cultural Heritage of Slovenia, Slovenia*)

Thanks to the numerous extensive construction projects carried out in Slovenia in the last two decades a great number of new, mainly lowland archaeological sites dating to the Bronze Age have come to light, many of which are located in Northeastern Slovenia.

After numerous preliminary reports but also the first integral monographs have been published we are for the first time able to deal with settlements, which have been excavated to an extent where we can truly speak about their inner arrangement, inner evolution, the appearance of their immediate surroundings etc., but also about settlement patterns on the (micro-)regional level. Besides that, it is also the recently excavated graveyards, which have shed new light on the preparation of graves, their arrangement and the burial rites in general. Interesting adjacent information can be gained when we can compare recently excavated settlements and the belonging cemeteries as for instance at Pobrežje near Maribor.

Striking new data was furthermore gained from projects, which are including the application of remote sensing techniques for landscape analysis or the large scale osteological analysis and the radiocarbon dating of the burned bone material, which can be counted amongst the latest and most interesting developments in the field.

### **A23.21: Settlement Dynamics in Late Bronze Age Northern Croatia**

by **Hrvoje Kalafatić** (*Institute of Archaeology, Croatia*)

This paper draws on archaeological research on settlement patterning and landscape use at the end of the Middle and the beginning of the Late Bronze Age in Northern Croatia. It examines the spatial relations of two neighboring prehistoric populations that inhabited the basins of the Sava and Drava rivers at the time of “transition”. The article analyzes the way the two communities, known as Virovitica and Barice-Gredani groups, were interrelated in both settlement patterning and landscape use. This paper will use examples from recent excavations of the sites of Mačkovac-Crišnjevi, Orubica and Čepinski Martinci. It will show how internal settlement structure could be employed to develop not just the knowledge on scale and size, but rather that of a settlement as a “living system” – an arena of social, economic, cultural events and practices. In conclusion the paper suggests that the study of a particular Late Bronze Age settlement organization, defense systems, metallurgical activity and burial rites calls for new and complex analysis of the prehistoric socio-landscape and landscape activities.

### **A23.22: Landscapes of Power: The Political Economy of Bronze Age Hungary**

by **Timothy Earle** (*Northwestern University, USA*)

Patterned variations in landscapes structure across the Bronze Age of central Europe can be used to describe social articulations to agropastoral production and international trade. A primary driver of social change through time and across space has been the political economy, which structures economic flows in support of political structures of power. The political economy can be studied in prehistory by an analysis of the landscapes that incorporate emergent property relationships that channel production and distribution of resources in the political economy. This paper lays out a model of the political economy as structured in the landscape by property relations materialized with permanent settlements, fortified central places, cemeteries, and other monumental constructions. My contention is that major variations in Bronze Age societies can be explained in part by this political economy analysis.

## **POSTERS**

### **A23.01-P-2: Evidence for Increase in Social Complexity in the Early Bronze Age in South Bohemia – Case study: The Vrcovice Hillfort**

by **Daniel Hlášek** (*University of West Bohemia, Czech Republic*), **Ondřej Chvojka** (*University of South Bohemia, Czech Republic*), **Petr Menšík** (*University of West Bohemia, Czech Republic*), **Petr Netolický** (*University of West Bohemia, Czech Republic*)

The region of South Bohemia belonged to peripheral areas with few evidence for settlements from the Neolithic and Eneolithic periods. The number of sites increased during the Early Bronze Age. A hierarchical settlement structure emerged, the phenomenon of a network of hilltop sites was characteristic for this change. The causes of the change in the trend can be searched for in the economic and social spheres. The traditional interpretation of this phenomenon is associated with the need for a transit area between more developed regions of Central Bohemia and the Danube

Basin. The beginnings of the exploitation of mineral resources, especially gold, can be taken into account as well. The sudden change in the use of sporadically occupied landscape in comparison with the results of analyzes of artifacts and ecofacts is what makes this region suitable for testing models of increasing social complexity. The Vrcovice Hillfort is an important representative of the new settlement structure. This site is unique thanks to its one-phase settlement that allows a detailed study of this period. The results of a complex processing of the field research providing us with new information about the beginnings of intensive settlement activities in South Bohemia are the main parts of this paper.

### **A23.02-P-2: Princes of the Marshes, Princes of Metals**

by **Liviu Marta** (*Satu Mare County Museum, Romania*)

The western slopes of the Eastern Carpathians contain important amounts of copper, gold and salt. To a large extent, the development of the Bronze Age in the region is dependent on these sources. It may be surprising that metal objects in the region are found in the plain areas at unexpectedly long distances of 70–130 km from the metal sources. The mapping of fortified settlements, tumuli and elite metal artifacts outlines the existence of power centers, whose distribution is intimately associated with that of the spread of metal discoveries. The spatial overlap of the two types of situations in the lowlands suggests the control of the power centres from the plains, always lying at the meeting points of food rich ecosystems (lowlands and hills with swamps). These findings suggest that leaders from the Bronze Age preferred to live on “mounds of food” and not on “metal mountains”. It is not only the problem of “choice” between subsistence and prestige; the preference to live in lowland areas is based on the requirements posed by the exploitation of food resources, which requires daily work, while metal exploitation may require only episodic work.

### **A23.03-P-2: Karst Landscape Middle Bronze Age Settlement of Mačkovec near Novo mesto (Southeast Slovenia)**

by **Miha Murko** (*PJP d.o.o., Slovenia*), **Uroš Bavce** (*Institute for the Protection of Cultural Heritage of Slovenia, Slovenia*)

Mačkovec near Novo mesto is a complex multi-period archaeological site (Middle Bronze Age, Iron Age and the Roman period) that was discovered during archaeological research launched in 2006.

In 2010 and 2012 part of the archaeological site of Mačkovec near Novo mesto was excavated. Excavations revealed that a Middle Bronze Age settlement was spread out between three swallow holes underneath a hilltop area where the Roman graveyard and the Early Iron Age barrow were found.

The settlement consisted of several rectangular buildings on a flat surface between swallow holes. Beside post holes, many fireplaces and bigger pits containing a large number of pottery shards, were excavated. In between rocks, on the northern side of one swallow hole, many burned animal bones, pottery and burned clay shards were found. It seems that in this area traces of ritual offerings can be identified. On the edges of the two swallow holes four large pits containing ceramic pots were discovered.

A small settlement was defined by karst landscape and probably spread out in a larger area and consisted of smaller groups of houses and other objects scattered around the swallow holes.

## Session A24

### The Life of Lithic Tools in the Palaeolithic: Identification and Interpretation

Friday, 6 September 2013, 08:30–13:00

Room: EU 106 (Building 1, ground floor)

**Organisers:** **Petr Neruda** (Moravské zemské muzeum, Czech Republic) and **Andrzej Wiśniewski** (Uniwersytet Wrocławski, Poland)

Archaeological artefacts are static objects that were left behind or lost at a specific place (archaeological site). Many Palaeolithic artefacts are results of complex behaviour connected with dynamic activities of humans. In view of this fact, the main question of Palaeolithic archaeology is how to uncover the traces of previous modifications, thereby shifting static objects into the category of dynamic evidence. Identification of the life of lithic artefacts gives us an opportunity to reconstruct the human behaviour from the historical point of view. A good illustration of the importance of this issue is the recent study of Neanderthals' technical planning depth, which seems to be more complex than we thought previously.

The objective of the session is to summarize the possibilities of identification and measuring the extent of reduction, and consequently of interpreting the obtained results. Apart from refitting and use-wear analysis, there are several methods of studying tool reduction that have been applied for example on Middle Palaeolithic side scrapers or notched tools by H. Dibble, N. Rolland, S. Kuhn and others. Nevertheless, the life of other artefacts (i.e. cores, bifaces or burins) can be reconstructed as well. These items carry information about their manufacture and use, and through decoding of their history they can be utilised for the description of behaviour of our ancestors. It could be helpful to summarize various approaches (use-wear analysis, hafting, refittings, re-sharpening, reduction models etc.) and experience of scholars, and this way to demonstrate the usability of various methods.

#### **A24.01: How to reconstruct the volume of cores?**

by **Petr Neruda** (*Moravian Museum, Czech Republic*)

The importance of the technological approach for analysis of cores has been broadly accepted. The descriptive systems applied on assemblages are highly sophisticated, but in fact we only describe items in the stage of abandoning. But, if we want to reconstruct the economy of lithic production (the life of lithics), we should be able to specify the quantity of artefacts that were produced just on the site and after that consumed on various places.

There are two main ways usually used for the reconstruction of the original volume of cores. First one is based on the indirect evidence – comparison of both core and blank dimensions. Second way – refitting – allows reconstruct the technology of knapping and volume of items at the same time.

An opportunity that is still open is represented by using of scars preserved on the core surface. If we are able to determine the vector and length of blanks from the earliest phases of reduction in certain precision then we can calculate the dimension of core before extraction of individual blanks. Such approach can be usable mostly for hard percussion technics and especially for volumetric methods. Usability of such approach should be discussed in the framework of the session.

#### **A24.02: Early Middle Palaeolithic tool reduction in Central European perspective**

by **Andrzej Wiśniewski** (*University of Wrocław, Poland*)

This paper summarizes results of studies on the reduction of the early Middle Palaeolithic flake tools from Central Europe. The author explores reasons variation in the size and shape of the tools from the assemblages collected from sites located in Mittelgebirge (Germany), Kraków-Częstochowa Uppland (Poland) as well as Bohemian Massif (Czech Republic) and Carpathians (Slovakia). Studies on tool reduction included analysis of the main typological categories such as side-scrapers, notches and denticulated tools. The final results indicate clearly that one of the most important factors behind the tool variation was the morphology of selected blanks. It seems that the retouch location was strongly integrated with the blank structure. Quality and accessibility to respective raw material could also be perceived as a significant agent. In some cases differences in tool morphology can be observed between areas with suitable access to high quality raw materials (Bečov, Markkleeberg) and regions with poor deposits (Hôrka Ondrej). In the light of certain records the influence of mental templates on some flake tools cannot be excluded. This is indicated by presence of tools with pointed tips (eg. Ehringsdorf).

#### **A24.03: The Life of Tranchet-struck Bifaces from Boxgrove and High Lodge, UK**

by **Natalie Uomini** (*University of Liverpool, UK*)

Some Palaeolithic bifaces were modified with a “coup du tranchet”, which is a removal made from one side of the biface tip running down one edge of the tip. They often create a fresh cutting edge by removing an irregular or worn tip edge. They can be studied either on the biface itself, through the tranchet scar (negative), or on the tranchet flakes. In very rare cases there are refitting flakes and negatives.

These tranchet removals give us insights into the life of a biface by showing us:

- 1) what was the state of the biface before the tranchet removal;
- 2) how the tranchet removal was prepared;
- 3) what knapping followed the tranchet removal;
- 4) the sequence of tranchets that were struck from a single biface, in the case of several tranchet removals on one piece.

This paper will present data on tranchet flakes and negatives from two British Lower Palaeolithic sites: Boxgrove and High Lodge. These will illustrate the variety and similarities in the “coup du tranchet”, and implications for hominin behaviour will be discussed.

#### **A24.04: The life of Neanderthal lithics: technological behaviors from a spatio-temporal perspective (levels M and O of the Abric Romani site)**

by **María Gema Chacón** (*IPHES (Institut Català de Paleoeologia Humana i Evolució Social), Spain*), **Amelia Bargalló** (*IPHES (Institut Català de Paleoeologia Humana i Evolució Social), Spain*), **Francesca Romagnoli** (*Università degli Studi di Firenze, Italy*), **Bruno Gómez** (*IPHES (Institut Català de Paleoeologia Humana i Evolució Social), Spain*), **Manuel Vaquero** (*IPHES (Institut Català de Paleoeologia Humana i Evolució Social), Area de Prehistòria (Universitat Rovira i Virgili), Spain*)

Stone tools are one of the most important markers of hominin activity and characterize the degree of cognitive complexity involved in their production and use. The identification of the history of lithics assemblages allow to reconstruct the human behavior from an historical point of view. But, depending on the type of methodology of study used we can go further and reconstruct its life from a spatio-temporal perspective providing behavioral inferences.

The first analytical level is the technological and functional characteristics of the assemblage-as-a-whole (*geological time scale*) focused on raw material provisioning, knapping strategies and tool manufacture.

The second level of analysis is based on refitting and the identification of Raw Material Units to identify the single technical episodes. The spatial distribution of these events allows to determine the temporal dynamics in the formation of the lithic assemblages (*ethnographic time scale of the individual events*).

This methodology has been already applied to various lithic assemblages from the Abric Romani site. In this paper we present new data about other levels of the site (M and O) showing that this approach works very well to decipher not only the life of lithic tools but the whole history of the Neanderthal technological behaviors.

#### **A24.05: Technical behavior in the Mousterian from the Carpathian caves (Romania)**

by **Elena-Cristina Nitu** (*“Princely Court” National Museum Târgoviște, Romania*), **Marin Cârciumar** (*Valahia University of Targoviste, Romania*)

Most of the Paleolithic settlements of Romania in which Mousterian cultural layers have been defined are concentrated in the Southern Carpathian region and they are represented mainly by cave dwellings, extensively researched beginning with the first part of the 20<sup>th</sup> century. The toolkits analysed in this study come from Mousterian sites that yielded a large number of tools: Bordul Mare Cave from Ohaba Ponor, Curata Cave from Nandru, Cioarei Cave from Borosteni, Muierii Cave from Baia de Fier. The use of a large diversity of rocks (flint, chert, jasper, quartz, quartzite, andesite, basalt, diorite etc.) provides particular technological and typological features to the material culture from the Carpathian caves and could give precious information on the economy of the Mousterian communities concerning the use of raw material sources and the technical options for tools production. In this respect, our study will focus on the identification of the technical stages used in the tools production, according to each type of rock, starting from the raw material, and continuing with the obtaining of supports, and with their transformation into tools. In some settlements, technical information was obtained from the refitting made.

#### **A24.06: Experiments around the fire. Discovering Human a natural processes in middle Paleolithic hearths.**

by Irene Ortiz Nieto-Márquez (Universidad Autónoma de Madrid, Spain), Javier Baena Preysler (Universidad Autónoma de Madrid, Spain)

The use of fire technology in prehistoric societies is very well known, but during middle Palaeolithic, fire reproduction and control is under study. The study of hearths illustrated social aspects of humans groups through their typology and morphology, combustible materials studies, and spatial distribution of remains as well. In this respect is important to discriminate the cause of human or natural displacements of records. Another aspect to be considered is the influence of location of elements in relation with the fire as well as the influence of temperature on each raw material.

In this paper we present a comparative study of experimental fire places with the archaeological examples from El Cañaveral middle Paleolithic site. The study analyzes the relation between temperature, location inside the fireplace, and spatial distribution of heated elements in order to consider "fire spatial displacements". Controlling variations in the distribution of elements, due to fire fragmentations, and with the assistance of refits, we could discriminate the existence of other post sedimentary agents, as well as knapping technology. On that way, we would try to determinate some patterns of Neanderthal activities around hearths, and show dynamic aspects of lithic tools' life.

#### **A24.07: Foliolate tool biographies from the LMP and EUP periods in Northern Hungary**

by Zsolt Mester (Eötvös Loránd University, Hungary)

Bifacial foliate tools have played considerable role in the Late Middle and Early Upper Palaeolithic of Hungary, especially in Jankovichian and Szeletian cultures. Many of them have been unearthed from cave sediments, and several stray finds are known without Palaeolithic or any archaeological context. Recent technological studies provided to reconstruct conceptual and operative schemes applied for their production. This approach is combined with taphonomical studies under microscope for understanding the biography of the foliate tools. We focus on 1) distinguishing between features related to technical process and that originated of natural effects for clarifying the problem of some characteristics of Early Szeletian foliated tools thought to be cryodeformations; 2) comparing stray finds to archaeologically documented pieces for trying related them to possible cultural context.

#### **A24.08: Technology and raw-material economy within Nubian Levallois in the Sahara (Bayuda Desert, Sudan)**

by Mirosław Masojć (University of Wrocław, Poland), Maciej Ehlert (University of Wrocław, Poland)

Due to abundance and easy accessibility of volcanic and sedimentary rock Bayuda Desert in Sudan was a perfect source of raw material for prehistoric communities.

Most Palaeolithic sites in the Bayuda are situated either on the tops of culminations of volcanic origin or at their foot. In their majority they are hardly eroded.

Among the above-mentioned several dozen sites discovered recently, site BP 177 (known locally as Goat Mountain) is an exception. Unlike in the remaining ones, the site's Palaeolithic material has been preserved in the original stratigraphic arrangement in a relatively small, enclosed space. The site was dated using TL/OSL methods.

A distinctive feature of the technology identified at the site is its predetermined character. Among the cores, the most visible characteristics is the classic Levallois method of core reduction, which is especially suited to the volcanic rock raw material. Apart from the classic method the assemblage also displays Nubian methods of reduction, both type 1 and 2. The most preferred raw material for these methods is fossilised wood. Detailed relations between technology and raw materials observed at the site will be discussed.

#### **A24.09: Biographies of the Magdalenian lithic tools from the Polish Uplands**

by Katarzyna Pyżewicz (Adam Mickiewicz University in Poznań, Poland)

The purpose of the presented paper is to investigate the utilization of lithic materials of the Magdalenian settlement from south Poland. The studied artefacts came from two excavation sites – Ćmielów 95 „Mały Gawroniec” and Podgrodzie 16, which are located on the northern part of Kielecka Upland. The research method applied in the presented studies is the combination of use-wear analysis of flint artefacts and experimental research. Special attention was paid to the analysis of macro and micro traces of hafting, usage or reutilization of lithic materials.

The results of these studies reveal correlations between usage, morphology, applied technology and a choice of raw flint material. On the basis of these results it is possible to obtain biographies of individual flint artefacts and gain insight into production and use of flint materials in Magdalenian societies.



## Session A25

### Managing lithic tools: The contribution of technological and functional studies to the understanding of stone tool management during the Neolithic

Friday, 6 September 2013, 08:30–13:00

Room: EP 208 (Building 1, 1st floor)

**Organisers:** Jimmy Linton (Université de Bourgogne, France), Juan F. Gibaja (Institutió Mila i Fontanals, Spain), Niccolò Mazzucco (Institutió Mila i Fontanals, Spain) and Loïc Torchy (Université de Toulouse le Mirail, France)

The development of technological, functional and petrographic studies on Neolithic stone tool assemblages since the end of 20th century has led to the description of several strategies of tool production, supply and use. In many cases, the development of specialised productions with a high level of know-how resulted in differentiation between producer and consumer. Long range supply networks gradually developed, which sometimes extended beyond the regional framework of producer cultures. At the same time, simple domestic production also existed, which relied on a much lower level of know-how. Several analyses have shown that, from the beginning of Neolithic in the Near East, to the last Chalcolithic cultures in Western Europe, tool management operated at different levels, revealing the complexity of the social and technical organisation of Neolithic societies. These different levels of management can be observed in every component of lithic assemblages, and at every steps of the “chaîne opératoire”, from raw material acquisition to used tool recycling.

The aim of this session is to contribute to a better understanding of the different levels of management of lithic tools, through integrated and cross-data analyses. We shall examine the ability of archaeologists to reconstruct these different levels of management and what this reconstruction can teach us about the social, economic and technical organisation of Neolithic societies.

#### A25.01: A distinctive Neolithic toolkit from Bulgaria: raw material, techno-typological and functional connotations

by **Maria Gurova** (National Institute of Archaeology, Bulgarian Academy of Sciences, Bulgaria)

Bulgarian Early Neolithic chipped stone assemblages show coherent and diagnostic formal flint toolkits across the vast Karanovo I and II cultural area. The term ‘formal toolkits’ is used here to reflect tools that possess or embody one of more of the following attributes: standardized form, additional effort in manufacturing, potential for re-sharpening, use of special raw material, advanced preparation, anticipated use and transportability. Early Neolithic formal toolkits are easily recognizable and comprise tools made of high quality yellow (waxy) white-spotted flint, originating from northern Bulgaria and often called ‘Balkan flint’. The typological spectrum includes mainly blades with (bi)lateral semi-steep to steep retouch and sometimes pointed or rounded (end-scraper-like) ends. The blades are produced using indirect percussion (punch) technique. Sickle inserts made on blades and with evidence of multiple posterior re-sharpening are also included in the toolkit.

Although the ‘Balkan flint’ problem has inherently been linked to the Neolithization debate, this problem remains insufficiently elucidated. The paper contributes new data concerning the source or sources of Balkan flint and the distribution, techno-typological features and functional connotations of the Early Neolithic tools/toolkits, and provides a diachronic perspective on the use of this cultural phenomenon in the context of the Balkan Neolithic.

#### A25.02: The Human Occupation of the Eastern Pyrenees between V-IV millennium cal BC: a view from the lithic record

by **Niccolò Mazzucco** (Milà i Fontanals (IMF-CSIC), Spain), **Ignacio Clemente** (Milà i Fontanals (IMF-CSIC), Spain), **Juan F. Gibaja** (Milà i Fontanals (IMF-CSIC), Spain)

Eastern Pyrenees have been often regarded as peripheral zones, slightly affected by the broad socio-economic changes that took place in the Iberian Peninsula, and more in general in the Mediterranean Europe during the middle Holocene. During prehistory, mountainous areas were mainly associated to the Megalithic phenomenon, and only in later periods, to transhumance practices. However, during the last ten years a number of paleoecological and archaeological researches demonstrated that an increasing anthropic pressure over the mountain environment already starts since 6500 years cal BP. In this work we present the results of the study of three different sites of the Central Eastern Pyrenees dated between the V-IV millennium cal BC. On the basis of the analysis of the lithic record, both in term of provenance, technological and functional analyses, we suggest that since the early phases of the period, Neolithic populations exploited the mountainous environment adopting a differential settlement pattern involving regional seasonal mobility and specific economic strategies.

**A25.03: Adaptation and economic changes between early Neolithic and middle Neolithic in North-East Italy: techno-functional analysis of the lithic industries of La Vela (TN) and Lugo di Grezzana (VR)**

by **Fabio Santaniello** (Università degli studi di Trento, Italy), **Stefano Grimaldi** (Università degli studi di Trento, Italy), **Annalisa Pedrotti** (Università degli studi di Trento, Italy)

Lithic assemblages coming from two Northeastern Italian Neolithic sites have been techno-functionally analysed. Lugo di Grezzana (VR) is an open air early Neolithic ("Fiorano" facies 5300–4900/4700 BC cal) site, located close to the flint formations of the Monti Lessini. La Vela (TN) open air site, in the Adige valley, provides a stratigraphic sequence ranging from early Neolithic ("Gaban" facies 5000–4700 BC cal) to the middle Neolithic (Square Mouth pottery, VBQ I (ca.4700 BC cal) and VBQ II (4500/4440–4300 BC cal)). In this region the early-middle Neolithic transition is characterized by environmental, economical, and social changes such as the increased presence of bovines among the domesticated animal species and the change of the settlement strategies. This research will focus on the relation between lithic raw material provenance and production systems in order to define these changes from a techno-functional perspective. Results show that the early Neolithic lithic production is characterized by high presence of unidirectional blades while, during the two VBQ phases, the production is characterized by the presence of flakes. Differences in raw material provenance as well as in functional purposes are also noticed.

**A25.04: Understanding of lithic industries: analysis of the stone industries technological contexts completeness**

by **Vladimir Lozovski** (Institute for the History of Material Culture of the Russian Academy of Sciences, Russian Federation)

The procedure of technological relationship definition between various types of knapping products in different paleoindustries is one of the most traditional research methods in archeology. Technological contexts of various forms of knapping products can be always estimated from the point of view of their completeness. That is why in any set of splitting products we can define not only existence, but also lack of some forms of artifacts and also make assumptions of sizes and features of missing morphological forms. Existence and/or lack of artifacts in archaeological collections can be a result of various reasons, including bad safety or poor research of an occupation layer.

However, quite often an archeologist faces a situation when even after opening considerable areas of the cultural fill, the excavation of new areas doesn't lead to opening of new forms of knapping products.

This paper represents an example of technological contexts of the stone industry from Early Neolithic Rakushechny Yar site (South Russia region). In this case incompleteness of knapping products technological contexts is defined and assumptions about the character of absent artifact forms are made. It is obvious that the traditional typological approach wouldn't allow full understanding of the phenomenon observed by us.

**A25.05: Flint tool management during late Néolithique in France and western Switzerland: a multi-scalar process.**

by **Jimmy Linton** (UMR 6298 ARTeHIS, France)

The study covers an area between Grand-Pressigny large flint blades workshops (France) and Neuchatel lake dwellings in Switzerland. It is based on the results of technological and functional analysis of twenty sampled lithic assemblage, dated between the last quarter of the fourth millennium and the third quarter of the third millennium BC. The analysis has led to the description of a complex strategy of tool kits set up.

In every studied assemblage, tools are made both with local and distant origin flint. Each kind of flint seems to be used for the same everyday life tasks. Whereas, some tools stand out by the special management to which they were subject, and this management operated at different levels and at different steps of the "chaîne opératoire".

Our work will focus on the understanding of these different levels of management and the interpretation we can make for a better comprehension of Neolithic societies.

**A25.06: A Middle Neolithic blade depot and its social context (Boldogkőváralja, Northeast Hungary)**

by **Norbert Faragó** (Eötvös Loránd University, Hungary), **Zsolt Mester** (Eötvös Loránd University, Hungary), **Jacques Tixier** (independent, France)

During rescue excavation in 1963 at Boldogkőváralja, Tibor Kemenczei unearthed a part of a settlement of the Neolithic Bükk culture. The remains of 7 houses and 4 workshops were identified. In direct connection of a house and a knapping workshop, a vessel containing 566 knapped blades have been found. The technological analysis demonstrate

by metric and morphologic data that the production whole assemblage was made in the frame of a single blade production concept and it belongs to one of the workshops. Based on the archaeological context we conclude that a specialist in knapping have produced blade blanks which was exposed in an "open" vessel accessible for all the people living at the village.

#### **A25.07: Differences in flint procurement and processing between settlements of the Late Neolithic in Central Bosnia**

by Nils Müller-Scheessel (*Römisch-Germanische Kommission, Germany*)

Intensive recent research in Central Bosnia has shown that during the Late Neolithic local settlement patterns underwent fundamental changes in terms of the sizes of settlements – some probably including thousands of inhabitants at their heyday – as well as the placement of the settlements in the landscape. This seemingly contrasts with during that time unchanging techniques in processing flint and flint tools. However, closer quantitative studies reveal distinct differences between the central settlement and the peripherals ones when it comes to flint raw material procurement or tool production. For this end, roughly 10000 pieces of flint, among them ca. 200 cores and 2000 tools, have been studied in detail. The present paper explores the differences between the various settlement types and puts them into the perspective of the general changes of settlement patterns visible in the archaeological record.

#### **A25.08: Spatial Separation between Manufacturing and Consumption of Stone Axes as an Evidence of Specialised Production in Karelia (ca. 3500–1500 BC)**

by Alexey Tarasov (*Institute of Language, Literature and History, Karelian Research Centre, Russian Academy of Sciences, Russian Federation*)

Axes and adzes made of local greenstones were very common in Russian Karelia since the initial inhabiting of this territory during the Mesolithic. Nevertheless, several traits of the industry of wood-chopping tools from sites with Asbestos Ware (ca. 3500–1500 cal BC) make it quite different from earlier traditions. This industry is distinguished by selective choice of raw material of very high quality (mostly metatuff), the most sophisticated technology that had been ever used for making stone axes in prehistoric Karelia, the highest recorded degree of morphological standardization. What is especially important, assemblages from settlement sites with housepits testify that production of wood-chopping implements did not take place at these sites, because corresponding debitage is lacking. Workshop sites for making them are known nowadays only in one relatively small area on the western coast of Onega Lake. Dozens of workshops are characterized by presence of wastes from all stages of the reduction process, and some of them reveal evidences of production en masse. These facts allow speaking about quite developed specialization, i.e. making of tools by relatively closed social group and their distribution within the rest of the society, as well as neighbouring and distant societies, through exchange networks.

#### **A25.09: Lithic inventories from the Eneolithic tell settlement of Sultana – Malu Roșu, south-eastern Romania**

by Ciprian Astalos (*National History Museum of Romania, Romania*)

The paper presents the analysis and comparison of chipped lithic inventories from selected contexts from the Eneolithic tell settlement of Sultana – *Malu Roșu*, south-western Romania. From cultural point of view they belong to the Kodjadermen – Gumelnița – Karanovo VI cultural complex. The main attention will be given to the technological and typological study of the assemblages, dominated by endscrapers on blades, (retouched) blades and sickle inserts. The issue of raw materials will be shortly discussed also. The characterization of the raw material is made through macroscopic visual analyses. The high quality yellow-brown flint varieties known as Balkan flints are dominant. The raw materials used at Sultana match well with the general image obtained so far for the eastern Balkans for this period. Finally, a comparison between the assemblages found in different contexts will be made and hypotheses about the similarities and differences observed will be advanced. Also, observations will be made about the place of Sultana findings in the wider context of the southeast European Eneolithic lithic assemblages.

*This work was supported by a grant of the Romanian National Authority for Scientific Research, CNCS – UEFISCDI, project number PN-II-ID-PCE-2011-3-1015*

## **A25.10: Stone industries as a cultural indicator of the Middle Trans-Urals Neolithic**

by **Svetlana Zyryanova** (Urals Federal University, Russian Federation)

Middle Trans-Urals Neolithic settlement (mainly camps and sites) dated from the second half of the 6<sup>th</sup> – second half of the 4<sup>th</sup> millennium BC (the uncalibrated dates). The archaeologists defines 5 cultures (Koshkino, Kozlovo, Poludenka, Boborikino and Sosnoviy Ostrov cultures) by typological analysis of artifacts (first of all pottery) and building constructions. However, the complex study of stone implements (technology, typology, use-wear analysis) allows to develop the total view and features of the stone industries Neolithic cultures and sub-cultural phenomena. The paper back ground includes 18 sites collections – more then 13 000 stone artifacts. The most valuable sources are mono cultural collections. As a result, there was established the significant fact regional similarity the Neolithic stone implements, but the cultural specific is not so clear. The common raw materials were the main reason for the commons technologies. At the same time, the differences were connected with the sites specialization (hunting camps, long time settlements etc.). Practically speaking, the specific items are the most important cultural indicator: arrow-points, geometrical microliths etc. Probably, these tools reflects both process as neolithisation local Mesolithic population, as cross-cultural and inter-regional relations.

## **POSTERS**

### **A25.01-P-1: Possibilities and limits of spatial analysis: the chipped stone tools of the Late Neolithic site of Polgár-Csőszhalom, Northeast Hungary**

by **Norbert Faraqó** (Eötvös Loránd University, Hungary)

The younger phase of the Neolithic in Hungary is the time of the first emergence of tells and the first signs of complex societies. In this period the spatial observation of the chipped stone industry may lead us closer to the understanding of the prehistoric society for multiple reasons. This kind of archaeological source is abundant in most of the times on large neolithic settlements. This fact is especially true in the case of Polgár-Csőszhalom in Northeast Hungary, where during the excavation of 3,5 ha more than eleven thousand chipped pieces were unearthed. Together with the complex nature of this site – tell and horizontal settlement in the same locality – hopefully a complex household network analysis can be conducted. Our still ongoing, long-term project yielded some information and question in the same time during the evaluation of the very first part of the assemblage. The material connected to two intersecting houses raised the problem of interpreting differences in temporal and spatial dimensions. In other case the analysis of one of the large-scale pits showed us that the data coming from this archaeological source should be handled with great caution because of the taphonomic processes.

### **A25.02-P-1: The Lithic Tools of the Funerary Contexts of the NE of Iberian Peninsula**

by **Juan F. Gibaja** (Mila y Fontanals (IMF-CSIC), Spain), **Xavier Terradas** (Mila y Fontanals (IMF-CSIC), Spain), **Antoni Palomo** (Universitat Autònoma de Barcelona, Spain), **Niccolò Mazzucco** (Mila y Fontanals (IMF-CSIC), Spain)

Since more than a decade we are working on the lithic tools deposited as burial goods in the funerary contexts of the NE of the Iberian Peninsula. In this paper we are focusing on the analysis of the lithic materials from different necropolis dated between the end of V and the beginning of the IV millennium cal BC. We are going to present a “biography” of those instruments, since their production until their deposition in the burials. We will compare their use in respect to the instruments found in the domestic contexts, thus investigating the criteria behind the selection of burial goods. On the other side, linking the functionality of those implements with the sex and age patterns of the inhumated individuals we will propose hypothesis about their social organization.

### **A25.03-P-1: Lithic assemblage from Globular Amphora culture grave – an example of skilled production**

by **Witold Gruzdz** (Cardinal Stefan Wyszyński University in Warsaw, Poland), **Piotr Włodarczak** (The Institute of Archaeology and Ethnology PAN, Poland), **Katarzyna Pyzewicz** (Adam Mickiewicz University in Poznań, Poland), **Marcin M. Przybyła** (Stowarzyszenie Archeologów Terenowych STATER, Poland)

This paper is aimed at presenting technological and functional studies carried out on lithic grave goods from Koszyce site. The site is located on Małopolska Upland, the farthest to the south border of Globular Amphora culture presence in Poland. Lithic assemblage consists mostly from blades, square section axes and flakes. The majority of flint materials are made from imported raw materials and exhibit high level of know-how. During our studies we applied refitting method and use-wear analyses to access reduction sequences and functional biographies of selected items. Results from our investigation were later compared with data that were obtained from other sites and that were known to have different function, such as flint mines and settlements dated at the same period.

#### **A25.04-P-1: Technological and functional studies of stone tools from the Neolithic Chernushka site (Cis-Ural)**

by **Evgeniia Lychagina** (*Perm State Humanitarian Pedagogical University, Russian Federation*), **Tatiana Tsiqvintseva** (*Udmurt State University, Russian Federation*)

Chernushka site is located on the edge of floodplain terraces on the left bank of the Kama; its height is 14 m above the nowadays shoreline in Chernushka village in Perm Krai (the Middle Urals).

Complex related to Kama Neolithic culture was revealed in the settlement during research in 2003. Construction of large dwellings of earth-house-type of square form, ceramics ornamented with comb ware stamp, tools from tabular flint with bifacially treatment are typical for Kama Neolithic culture. 2 radiocarbon dates have been obtained in calibration values at Chernushka site that date back to the 5<sup>th</sup> millennium B.C.

Raw material is quartzite and flints pebble, milk and gray flint. Blanks for tools were sheared off mainly through indirect percussion knapping and enhanced spinning. Initial flakes chipped off the soft hammer and hammerstone. One core were cone-shaped, there were negatives from shear plates, fixed counterattack, plate knapping around. The edge of the platform was framed by abrasion and reduction. Tools on small and medium plates dominate collection. Very few tools on blade- flakes and core-like chips were found at site. Fixed technology is not typical for the Kama Neolithic culture

#### **A25.05-P-1: Trapezes with a flat pressure retouch in the South of Eastern Europe**

by **Valery Manko** (*Crimean branch of Institute of Archaeology of NAS of Ukraine, Ukraine*)

The appearance of trapezes with flat pressure retouch in Eastern Europe took place at the end of VII century BC. In a few centuries, in the middle of VI century BC, these tools spread on a vast territory in the basin of Dniester, Southern Bug, Dnieper, Don and Volga.

The appearance of these trapezes in Crimea is connected with the advent of technologies, which should be linked to the territory of the Near and Middle East, where prototypes of the eastern Europe trapezes are known in latest complexes of PPNB and Early Ceramic Neolithic. The penetration of this technology was probably made through the Caucasus.

Innovative forms of tools differed by the manufacturing process, typology of trapezes was in some cases the main marker of differences between Neolithic archaeological cultures. At the same time, there are cases when trapezes of one type as a common component of the Neolithic cultures. In this regard, there are several versions of the causes of such phenomena:

- Settling of the carriers of one cultural tradition;
- Borrowing existing technologies by individual groups;
- Convergent technology development of various groups of the population, due to the close contacts that led to replication of new tool's types.

#### **A25.06-P-1: Techno functional studies of polished stone axes and adzes: experimental programme and first results**

by **Alba Masclans** (*Universitat de Girona, Spain*), **Antoni Palomo** (*CSIC-CCHS/UAB, Spain*), **Juan F. Gibaja** (*Institució Milà i Fontanals (CSIC-IMF), Spain*)

With this communication we want to present the preliminary results of our experimental programme, headed to systematize a methodology in order to study hornfel polished axe and adze use wear. This enterprise is the first step on a large project focused on studying Catalanian Neolithic assemblages, although we will not detain ourselves with this question here.

We will expose our advances in the establishment of use wear identification patterns originated in the course of production, use and repair activities, concentrating on use-activities such as ploughing, felling trees and bone work. We will point out which elements have been taken into account in this first approach – such as time and kinematics of work and the tool's morphological and petrographic characteristics – and which have been its real significance. Likewise, we will do a first estimation of to what extent the characterisation criteria employed for other materials (as micropolishes, roundings, striation or microchipping) serve us in our hornfel tools.

#### **A25.07-P-1: Contacts between Kola Peninsula and Southern Scandinavia in the Early Metal Period: New Evidences**

by **Anton Murashkin** (*Saint Petersburg State University, Russian Federation*), **Alexey Tarasov** (*Institute of Language, Literature and History, Karelian Research Centre of Russian Academy of Sciences, Russian Federation*)

New evidences of contacts between inhabitants of Kola Peninsula and Southern Scandinavia in the Early Metal Period were obtained during the last decade. Already in 1974, the grave in Bolshoy Peskonets Bay provided a dagger, spear-head, and a gouge with four-sided cross-section. Properties of flint material, typology and technological traits testify that this complex is of South Scandinavian origin. In 2010, large-scale excavations were organized on settlement housepit site Zavalishina 5. One of housepits contained a series of 32 flint flakes. In most cases their material looks identical to flint from Southern Scandinavia. Morphological details are characteristic for debitage from making four-sided axes with the aid of punch technique. We propose that these objects were transported from Southern Scandinavia. Another evidence is the chemical composition of bronze items from the cemetery on Bolshoy Oleny Island. The alloy contains 10–15% of tin along with tiny proportion of lead, nickel, and iron. Presence of tin in such proportion supports non-Eastern European origin. Bronzes with tin are common for Central and Western Europe, and their occurrence on Kola Peninsula reveals western direction of contacts. These facts testify contacts between these two distant regions. The question about nature of contacts remains open.

#### **A25.08-P-1: Taxonomic levels of the Neolithic silicic industry in Eurasian steppes**

by **Natalia Vybornova** (*Samara State Academy of Social Sciences and Humanities, Russian Federation*), **Aleksandr Vybornov** (*Samara State Academy of Social Sciences and Humanities, Russian Federation*)

One-layer Neolithic stands with large silicic complexes were studied in Aral Sea, north Caspian Sea and Black Sea regions. Their comparison study leads to several conclusions. Primary fission technique is based on flat cores, small and middle-size plates pressure. Microliths are specific features. There are no big cutoff tools. These features are inherent only to the southern sites and connected with the steppe landscape peculiarities. This makes it possible to single out the steppe techno-area. In the tool selection (geometrical microliths, drawknives, perforators) there are categories common only in the south and connected with the steppe farming peculiarities. They should be considered as steppe techno-complex. Wide variety of scrapers in some cultures (Caspian Sea area) and sameness in others (Aral Sea area) come from tribal peculiarities. Microliths have peculiarities in each region: triangles in Aral Sea, segments in north Caspian Sea, trapeziums in Black Sea Regions. It happens at the level of different Mesolithic underlying cause. They can be considered as a techno-group. Each Neolithic steppe culture has tips: Aral Sea – with side cut, Caspian Sea – stalked. This depends on cultural specificity and form cultural type. Specific microliths removability from early to later period is determined by latitudinal cultural interaction.

## Session A26

### The many faces of the Gravettian

**Saturday, 7 September 2013, 08:30–16:00**

**Room:** EP 206 (Building 1, 1st floor)

**Organisers:** **Alexander Verpoorte** (University of Leiden, The Netherlands) and **György Lengyel** (University of Miskolc, Hungary)

The Gravettian phenomenon (ca 34,000 to 24,000 years ago) is a complex biocultural adaptation to cold and arid glacial conditions, evidence of the remarkable adaptive flexibility of anatomically modern humans. The Gravettian is spread across Europe from Portugal to the Urals. Why does the Gravettian matter? With the focus on the 'origins' of modern humans, we have almost forgotten the evolutionary patterns in later Homo sapiens. The many faces of the Gravettian form a rich source of information on modern human evolution and the social and cultural adaptations developed during the Upper Paleolithic of Europe. The session aims to address this issue and discuss current research in terms of 1 theoretical frameworks, 2 proxies for behavioural variability, and 3 fieldwork strategies (especially sampling strategies and scientific methods).

#### **A26.01: The Gravettian between East and West**

by **Petr Šída** (*The University of West Bohemia, Czech Republic*)

The territory of Bohemia (Czech Republic) was until recently seen as an area with few traces of Gravettian settlement, although the first Gravettian artefacts were discovered in 1867 and first two Gravettian sites were excavated already in 1890s. Several other sites were excavated since and the quantity of sites reached several dozens. The available dates fall within the time period from 25 000 to 20 000 BP. Several modern excavations since 1930s captured parts or complete structure of the site. The most complex site is Lubná II with two hearths, an outdoor working area and a dwelling structure. A hearth and stone pavement with ash dump were found in Lubná VI. The findings of the Bohemian Gravettian are not as abundant as in Moravia. Art objects are quite rare. Eastern elements are missing and raw materials of chipped industry do not show eastern affinity. Glacial silicites from the southern Germany are dominating and some Bavarian hornstone is present. The composition of assemblages shows links towards the west of Saxony and Bavaria. The only evidence of contacts with the eastern Pavlovian are the findings of dentalia and a core made of radiolarite discovered in Jičín.

#### **A26.02: New facts about the Gravettian settlement in Trenčín basin (western Slovakia)**

by **Tomáš Michalík** (*Comenius University, Slovak Republic*)

Gravettian settlement of western Slovakia is known especially from the vicinity of Piešťany with its famous hot springs. In Trenčín basin – which is linked to the Piešťany region by a major river Váh – surface surveys since 1996 broadened considerably the knowledges about previously known local Gravettian sites Zamarovce or Trenčianske Bohuslavice.

Gravettian settlement is concentrated at the left bank of the Váh river in the cadastre of Trenčianske Stankovce municipality, where at least 6 sites were identified. The rest of newly discovered sites is situated in near Trenčianska Turná and Mníchova Lehota municipalities so we can speak about the Gravettian cluster in the southern loess slopes of the Trenčín basin.

Majority of the sites provided with the substantial number of typical Gravettian artefacts, which were made mainly of local red, brown, green and yellow radiolarite and northern flint. Typologically the industry comes mainly from younger phase of the Gravettian – shouldered points horizon, which is typical mainly for the Gravettian of western Slovakia.

Generally, similarities with the settlement strategy in other Gravettian regions in Central Europe (close contact with river, control of the river flow, local natural features etc.) was observed, although with some local specifics.

#### **A26.03: Gravettian in southern Poland – new discoveries and interpretations**

by **Jaroslav Wilczyński** (*Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Poland*)

The Gravettian technocomplex is characterized by a variety of inorganic and organic raw materials, artifact production, particular settlement structure, and art objects. It arose about 29,000 rcyBP in Middle Danube region and covered nearly the whole Europe. The most distinctive features of this technocomplex were characteristic stone tools (backed bladelets, shouldered points and Kostienki knives).

Pavlovian settlement is known from only single undated Upper Silesian open air sites. In the area of Lesser Poland, until recently we had only one Gravettian site – Kraków Spadzista excavated since 1967. This site provided an extremely rich stone inventory as well as remains of mammals dominated by the mammoth, that could be dated around 24-20 rcyBP. This situation changed when the Jaksice II site, located about 40 km distant in NE direction from Kraków Spadzista, was discovered. During the excavation, numerous stone artefacts and mammal remains were found. Four radiocarbon datings gained from mammals bones, strictly correspond to those obtained from Kraków Spadzista site. This gives us an excellent opportunity to compare these two inventories – both in type of raw material, structure of the inventory, technology, typology and finally landscape usage by the Gravettian hunters-gatherers.

#### **A26.04: The lithic record variability of Gravettian in Hungary**

by **György Lengyel** (*University of Miskolc, Hungary*)

Research on the Upper Palaeolithic in Hungary over the past decades has developed a threefold chronological and cultural model for the Gravettian. The earliest in the model is the Pavlovian/Older blade Gravettian between 29-26 k years BP. It is followed by the Ságvárián/Pebble Gravettian between 20 and 18 k years BP, and the Epigravettian/Younger blade Gravettian between 18 and 12 k years BP. This division partly mismatch the cultural sequence of the period under consideration in Eastern Central Europe. Current lithic technology studies upon Hungarian Gravettian assemblages point out the threefold model misspells parts of the archaeological record that actually has very comparable features to what is documented in other regions of Eastern central Europe. Present paper demonstrates how the lithic technology study can be used to define the cultural phenomena of the Gravettian in Hungary.

#### **A26.05: Lithic technology organization and human ecological behavior from the Gravettian of southern Iberian Peninsula.**

by **João Marreiros** (*Universidade do Algarve, Portugal*), **Nuno Bicho** (*Universidade do Algarve, Portugal*)

The origin and expansion of Gravettian industries in Southern Iberian Peninsula, associated with one of the oldest evidences for Anatomically modern humans c. 33 ky calBP is seen as an important step for the regional Upper Paleolithic cultural tradition setting.

Gravettian techno-cultural polymorphism associated with climatic oscillations had major impact on hunter-gatherer ecodynamics, reflected on demographic, technological and therefore cultural variability and organization during the Early Upper Paleolithic of Southern Iberia.

In this paper we use lithic technological variability and organization from Southern Iberia sites as a proxy to test human techno-cultural and settlement behavior. New evidence of lithic technology and tool design variability are reflex of distinct regional *facies* from a diachronic and regional scale.

Keywords: Iberian Peninsula, Gravettian, lithic industries variability, human ecology and settlement.

#### **A26.06: Of cave sites and settlement systems. Exploring occupation- and mobility pattern during the Gravettian of the Cantabrian Region**

by **Marcel Bradtmöller** (*University of Cologne, Germany*)

The aim of this paper is to discuss the variability of Gravettian lithic assemblages in the Cantabrian region on a functional level of interpretation, regarding to environmental adaptation and cultural traditions. With different regional settings and some remarkable climatic changes, the area of investigation covers a wide range of different habitat types for Pleistocene hunter gatherers. In doing so, six lithic assemblages of four caves sites (Cueto de la Mina, Cueva Morín, Bolinkoba, Amalda) were chosen as case studies, to reconstruct modes of human occupation of this specific settlement type and their implications to mobility and settlement pattern. These assemblages, situated in different habitats from Asturias to the Pyrenees, cover chronological the complete Gravettian period. In doing so it was possible to pin down some key aspects of lithic variability to changing pattern of human mobility in regard to altering environmental conditions, like raw material availability, topographic conditions and climatic fluctuations. In a second step the focus was changed from site to regional scale, putting the results in relation to a spatial and multivariate analysis of all documented Gravettian sites in the research area.



#### **A26.07: Horse hunting at the early Gravettian site of Le Sire (Mirefleurs, Puy-de-Dôme, France)**

by **Frederic Surmely** (GEOLAB, France), **Sandrine Costamagno** (CNRS, France)

The vast open-air site of Le Sire (Mirefleurs, Puy-de-Dôme, France) has two rich occupational levels dated to the early Gravettian (C. 30,000 BP). The main characteristics of this site is the exploitation

of raw material from very distant sources (Grand-Pressigny flint and early Turonian chalk flint), an abundance of small projectile points (microgravettes and blacked bladelets) interpreted as arrowheads, the absence of projectiles produced from faunal material and hunting strategies focused on horses.

#### **A26.08: The scene of spectacular feasts. Part 2: Animal remains from Dolní Věstonice II, Czech Republic**

by **Piotr Wojtal** (Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Poland), **Jaroslav Wlarczyński** (Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Poland), **Jirí A. Svoboda** (Department of Anthropology, Faculty of Science, Masaryk University; Institute of Archaeology at Brno, ASCR, Czech Republic)

The studies of archaeological and paleontological materials from Dolní Věstonice II and Pavlov I provide insight into human live nearly 30 thousands years ago. The remains of various groups of animals at give us an opportunity to reconstruct some aspects of Gravettian hunters everyday life. Bones of small (birds, hares, foxes) and medium (wolves, reindeer, wolverines) animals dominate at the sites, but there are also bones of large mammals (bears, cave lions, horses and mammoths), showing that the prey spectrum of hunters was wide. The large total number of animals remains supports the suggestion that they were accumulated during relatively long human occupation of the sites, perhaps months or even years.

The data show also that during early phase of Gravettian was not so clear hunting specialization comparing to later sites (e.g. Milovice I). Both large (mammoth, horses), medium (reindeer) and small (birds and hares) animal were important component of diet and for raw materials. The carnivores – wolves, wolverines and foxes certainly were important prey, which gave not only hides but also for tools production and ornaments. It should be mentioned that Pavlovian hunters didn't afraid large carnivores (bears and lions) and they were also its important prey.

#### **A26.09: Mega-sites of Eastern Gravettian**

by **Euqenia Bulochnikova** (Lomonosov Moscow State University, Russian Federation)

Avdeevo is an eastern gravettian site situated in the Russian Plain. Unlike other sites of Kostenki culture the site of Avdeevo has been researched in a continuous way – over 1500 square meters. There were found four main subdivisions. An attempt to divide the living area of the site in vertical and horizontal dimensions in separate pieces which differ chronologically and in cultural aspects was not successful. Among many theories, which may have a right to exist and explain the phenomena of Avdeevo site, the most well-grounded is the theory of an extensive and long-term encampment, which consisted of several specialized zones. So, I believe that we should consider the existence of mega-sites in the Paleolithic age. Morphological similarity set of tools proves that the whole site is monocultural. Inside one mega-site the differences are seen in various ways of the accumulation of material in different subdivisions. This work is focused on understanding the sites and mega-sites like Avdeevo, Kostenki, Zaraysk, Pavlova, Dolni Vestonice, etc., to realize that these are perhaps the one, inherent whole, which reflects the important aspects of human behavior in the last glaciation.

#### **A26.10: Old Collections and new excavations in a Gravettian key-site. Example of the Abri Pataud.**

by **Roland Nespoulet** (Museum National d'Histoire Naturelle, France), **Laurent Chiotti** (Museum National d'Histoire Naturelle, France), **Dominique Henry-Gambier** (Université Bordeaux 1, France)

Since 2005, the new excavation of the Level 2 at the Abri Pataud (final Gravettian, ~22 ka) is based on a threefold analytical approach: fieldwork, archive analysis, old collections analysis. Throughout the scientific project, these three approaches have enriched each other. They have identified precisely the potential of information as well as the old data limits. The excavation protocol and the sampling strategy have been conceived in order to give answer to the remained unanswered. The results, which have also their own methodological limitations, have clarified the status of human remains found in Level 2: it's funerary deposits. The results also allowed us to a better understanding of the modalities of the successive occupations of this level, although the surface of excavation was voluntarily limited.

#### **A26.11: Poiana Cireșului – a complex Gravettian settlement in Romania**

by **Marin Cârciumaru** (Valahia University of Târgoviște, Romania), **Elena-Cristina Nitu** (“Princely Court” National Museum Târgoviște, Romania), **Ovidiu Cîrstina** (“Princely Court” National Museum Târgoviște, Romania), **Daniela Iamandi** (“Princely Court” National Museum Târgoviște, Romania), **Minodora Cârciumaru** (“Princely Court” National Museum Târgoviște, Romania)

The settlement of Poiana Cireșului – Piatra Neamț may be indisputably considered, especially through the hard animal material industry found here and mostly through its adornments and art objects, the most significant in Romania and probably in this part of Europe. The settlement is located 4 km away from Piatra Neamț, on the right bank of the Bistrița River. Four Paleolithic layers, dated between 19.459±96 B.P. (ER 12.162) and 27.321±234 (ER 11.859), have been identified and systematically dug at Poiana Cireșului so far, belonging to a broad Gravettian tradition. In this respect, Poiana Cireșului provides an excellent chrono-cultural frame of reference for the long term Upper Paleolithic dynamics in the Carpathian area. The abundance of the reindeer remains (about 97%) indicates that the occupants of this site practiced a hunt interested mainly in this species. Poiana Cireșului provides a large collection of toolkits and organic material which includes bone tools, antler and ivory points (4 ivory points), adornments, carved bones. The organic material also includes spectacular discoveries, such as 12 pierced snail shells, found in the Gravettian, layer III, and a whistle made of a reindeer phalange discovered in the Gravettian, layer I, which were analyzed with a high-quality digital microscope.

#### **A26.12: The group of Zaraysk sites – new data on Eastern Gravettian of the Russian Plane.**

by **Sergey Lev** (Institute of archaeology of Russian academy of sciences, Russian Federation)

The open-air Zaraysk site in Moscow region was discovered in 1980 and systematically excavated from 1995 till nowadays. A total area of 500 square meters has been excavated in different parts of Zaraysk site. Time ago it was a big question whether Zaraysk represents a single site or multiple sites. Important to notice that we define “archaeological site” as a location containing a more or less continuous distribution of artefacts and features of similar typological character within a given stratigraphic unit. So Zaraysk actually represents a complex of closely related inter-stratified sites or occupation loci. Four sites or loci may be identified. Zaraysk A contains cultural remains in a sequence of four stratified occupation levels deposited in two geologic units. Second level represents a typical for Kostenki-avdeevoo culture living structure with the line of big hearths and semi-subterranean dwellings around. Zaraysk B occupies the upslope portion on another promontory 50 m to the north. At this locus, good for intrasite spatial analysis, the cultural remains are deposited in the upper buried soil, well correlated with upper level on Zaraysk A. New methods of data fixation and 3D reconstructions will be presented.

This work was financed by RFBR, project number 12-06-00375-a.

#### **A26.13: In the margin of the Gravettian**

by **Alexander Verpoorte** (University of Leiden, The Netherlands)

Current evidence for the northern limits of the Gravettian indicate short-lived occupational episodes and restriction of occupation to upland areas. It can be explained as environmental preference to survive harsh seasonal conditions in a complex topography with a variation of resources. The paper will discuss current archaeological claims for Gravettian presence of the North European Plain and the structure of faunal communities and the broader ecology based on dated faunal remains from the North Sea basin. What does the evidence tell us about Gravettian adaptive flexibility in its environmental and climatic context?

#### **POSTER**

##### **A26.01-P-4: The Khotylevo-2 site: an example of variability of Eastern Gravettian**

by **Ekaterina Voskresenskaya** (Institute of Geography Russian Academy of Sciences, Russian Federation), **Konstantin Gavrilov** (Institute of Archeology Russian Academy of Sciences, Russian Federation)

The Khotylevo-2 is a specific type of Eastern Gravettian site in the central of the Russian Plain. Sediments enclosing the cultural layers are composed of loess-soil series accumulated during the last Interglacial-Glacial cycle. The average thickness of the enclosing deposit is 6.2 meters. The cultural layer underlies in the thin initial soil and overlying of the thick cover of laminated loess-like loams. The underlying deposit is represented by redeposited remains of Bryansk (Middle Late Pleistocene) and Mesin (Eamian – Early Late Pleistocene) paleosol complex. The radiocarbon data of

Khotylevo-2 cultural layer span a time interval from 24960±400 (IG RAS-73) to 19600±450 (GIN 12861) BP, which is correspond with archaeological stratigraphy. Cultural layer includes bone remains of different degree of preservation (mammoth, bison, wolf, reindeer, rodents), as well as flint tools, bone charcoal, ocher. The site has been excavated in four points over an area about of 750 m<sup>2</sup>. Specificity of the Khotylevo-2 is manifest in the typological characteristics of both its flint, bone implements and mobile art. The same originality of this settlement is manifested by spatial structure and archaeological context of artefacts in general.

The studies were supported by RFBR project № 12-06-00375

## Session A27

### New Perspectives on Lithic Scatters and Landscapes: Different scales, different approaches?

Thursday, 5 September 2013, 08:30–13:00

Room: EU 106 (Building 1, ground floor)

**Organisers:** **Marijn Van Gils** (Flemish Heritage Institute and KULeuven, Belgium), **Eelco Rensink** (Cultural Heritage Agency, The Netherlands) and **Clive Bond** (University of Winchester, UK)

Many open-air ‘sites’ of the Palaeolithic, Mesolithic and Neolithic appear to be the result of long-term, intermittent or permanent, occupation at the same location. Sites are often very large in size and show a strong correlation to certain natural landscape features, topography or hydrography. This relationship with the landscape constitutes an important aspect to these sites. Consequently, it can be argued that lithic scatter studies are best conducted at a landscape scale.

At other locations only limited human activity has taken place, resulting in much smaller sites or even isolated scatters or artifacts. These sites may represent a different set of prehistoric activities and are more likely to contain homogeneous assemblages representing limited occupation phases. How do we approach and reconcile both scales?

What type of information can be obtained from each scale; how can they complement each other; how can we interpret them? With this in mind, how do we incorporate each scale in commercial, ‘preventive’ archaeological procedures? Large surface sites can be surveyed relatively easily and are sometimes predictable in their location. Small sites often remain undetected, especially when covered with sediments. Alternatively, small sites are more manageable to excavate, whilst very large sites can be impossible to excavate completely. What is the value of different scales of intervention on large scale sites/landscapes?

Discussion topics may include:

- ‘Information value’ of large and small scale sites and projects
- Scale in the prehistoric landscape
- Selection principles for research on large sites
- Approaches towards surveying small sites and for excavating large sites
- Scales of analysis between lithic assemblage, scatter and landscape.

#### **A27.01: The lithic landscape anno 2013. Current conception of hunter-gatherer settlement patterns**

by **Marijn Van Gils** (Flanders Heritage Agency, Belgium), **Erwin Meylemans** (Flanders Heritage Agency, Belgium), **Bart Vanmontfort** (K.U.Leuven, Belgium)

Over the past fifteen years, a number of large-scale survey- and evaluation projects in Flanders (Belgium) have yielded a better understanding of the location and extension of hunter-gatherer sites and their relation to the natural landscape. Subsequently, several excavations verified and detailed these ideas. The results show that lithic artefacts are almost continuously present throughout the landscape, but with greatly varying density. High density situations are often very extensive and seem to represent repeated occupation of the same preferential locations, resulting in spatial and cumulative palimpsests. These preferential locations typically are rich ecological gradient zones, most often in the immediate vicinity of open water. In their periphery, artefact densities gradually drop to a low density spread of ‘isolated’ finds and concentrations which appear to represent single occupation events. Throughout the rest of the landscape, this low density spread of finds seems to continue but gradually thin out further, with isolated concentrations existing but relatively rare. This paper deals with the challenges of the observed pattern for procedures in both research and developer-led archaeology.

#### **A27.02: Cultural and landscape formation in the Eastern Gulf of Finland, Baltic Sea: results of small-scale archaeological excavations in a large region**

by **Dmitry Gerasimov** (Peter the Great Museum of Anthropology and Ethnography /Kunstkamera/ Rus.Acad.Sci., Russian Federation), **Aivar Kriiska** (University of Tartu, Estonia)

Large-scale archaeological excavations provide the most reliable data for understanding the prehistory. Large-scale archaeological excavations are rather expensive nowadays. Small-scale excavations hardly bring understanding of the whole site context, but the results of integrated intensive archaeological surveys and palaeogeographical studies, and

interdisciplinary investigation of archaeological sites with small-scale excavations can provide reliable data for understanding the human prehistory as well.

Intensive archaeological surveys and small-scale excavations have been carrying out in the southern coast of the Gulf of Finland and Karelian Isthmus in the last decades. Also the data of large-scale excavations of the 1<sup>st</sup> half of the 20<sup>th</sup> cent were reapproached with new-coming questions and modern methods. The obtained results allowed establishing a strong correlation between two cultural areas and two main kinds of landscape in the mentioned parts of the region. Both cultural and landscape peculiarities began to form in the end of 8<sup>th</sup> ka cal. BC, from the beginning of the Litorina Sea stage. Sub-regional cultural specific can be traced through the later periods.

*Acknowledgements: RFBR, project "Geoarchaeology of Karelian Isthmus", #12-06-00348a; Est.Sci.Found., project "The reflections of the Eurasian Stone and Bronze Age social networks in the archaeological material of the Eastern Baltic", #9306.*

#### **A27.03: Early delta inhabitants: Reconstruction of Late Saalian landscape and occupation history of Flevoland and the Gelderse Vallei area (central Netherlands)**

by **Don van den Biggelaar** (Institute for Geo- and Bioarchaeology (IGBA), The Netherlands), **Sjoerd Kluiwing** (Institute for Geo- and Bioarchaeology (IGBA), The Netherlands), **Ronald van Balen** (Cluster of Climate Change and Landscape Dynamics, The Netherlands), **Jan Kolen** (Research Institute for the History and Heritage of the Cultural Landscape and Urban Environment (CLUE), The Netherlands)

Prior to the maximum southward extension of the Fennoscandian ice sheet (MIS 6, ~150 ka) the central Netherlands was part of a large delta which was occupied by hunter-gathers. The Middle Palaeolithic flint artefacts left by these early inhabitants of the central Netherlands occur in ice-pushed ridges surrounding the Gelderse Vallei area. These ridges contain pushed alluvial deposits from the rivers Rhine and Meuse.

Given the occurrence of the Middle Palaeolithic flint artefacts in the ice-pushed ridges surrounding the Gelderse Vallei area and the knowledge that the ice-pushed ridges continue into the subsurface of Flevoland, we hypothesize that the area of Middle Palaeolithic habitation has a northward extension, via the study area towards the mouth of the river Rhine into a proglacial lake in the current North Sea Basin. To test this hypothesis we have analysed high quality coring data, reconstructed the environmental context of the flint industry and assessed whether downstream changes occur in this Middle Palaeolithic flint industry that can be linked to a changing environmental context.

#### **A27.04: Stone Age archaeology along a new railway**

by **Per Persson** (University of Oslo, Norway), **Stine Melvold** (University of Oslo, Norway), **Guro Fossum** (University of Oslo, Norway), **Gaute Reitan** (University of Oslo, Norway), **Inger Eggen** (University of Oslo, Norway), **Lotte Eigeland** (University of Oslo, Norway)

Between 2010 and 2012 a large-scale archaeological excavation project took place in connection with the building of a railway in the Southwestern part of the Oslofjord, "Vestfoldbaneprojektet" (VFB-project). A total of 30 Stone Age sites were investigated. The new railway is to be built right through an area with intense activity during the Middle- and Late Mesolithic. It has been proposed an early phase with highly mobile settlement. If the interpretation of the Late Mesolithic sites as remains from sedentary communities is correct, then there has been a transformation toward more sedentary life during the Mesolithic. One likely dating of such transformation is the beginning of the Late Mesolithic.

Around the Oslo Fjord there has so far not been found any direct evidence of farming dating before the Late Neolithics (at about 2000 BC). The Early Neolithic sites excavated in the VFB-project are all situated at the former shore. The only resource available at the site is the sea. It is likely that the sites have been used in the same way as it was in the preceding Mesolithic phases. The Neolithics appears here as new axe types and the start of pottery usage.

#### **A27.05: Off-site survey and long-term human behavior in southern Jordan**

by **Esa Hertell** (University of Helsinki, Finland)

Between 1998 and 2005, the Finnish Jabal Harun Project documented a continuous lithic scatter over its study area, ca. 4 km<sup>2</sup> in size, in Petra, southern Jordan. The temporal range of the lithic finds extends from Lower Paleolithic to modern times. Analysis of the temporally diagnostic lithic concentrations within the study area suggests that erosion has systematically deflated the record and distorted our lithic profiles. Nevertheless, three different modes of land use are evident in the data. Middle Paleolithic is concentrated on the chert rich limestone slopes, whereas no similar

pattern is found for the material postdating that period. Paleolithic scatter as a whole is concentrated on the lower parts of local topography, and analysis indicates a relative lack of Paleolithic material on the top plateaus of the mountains. Post-Paleolithic lithic concentrations, by contrast, are spread over the entire study area, and are found on the top plateaus as well. It is suggested that these patterns signal changes in lithic procurement, food acquisition and mobility.

#### **A27.06: An Experimental Lithics Survey in northern Calabria (Italy)**

by **Martijn van Leusen** (University of Groningen, The Netherlands), **Francesca Romagnoli** (University of Florence, Italy), **Marlies van Kruijning** (The Netherlands), **Giovanna Pizziolo** (University of Siena, Italy), **Francesco Trenti** (University of Florence, Italy)

This paper focuses on the 'production', by modern survey teams, of primary spatial lithics distribution evidence across the landscape. We conducted an experimental survey in the autumn of 2012 to find out how much of the 'lithic landscape' had been left unobserved by the first author's long-term systematic multiperiod Raganello Archaeological Project (RAP) field surveys in this south-Italian river basin. The experiment consisted of very intensive (25% – 100% coverage) resurveys of selected areas and fields by a team including experienced lithics specialists from the universities of Florence, Siena and Groningen, and aimed to answer basic questions such as:

- What is the significance of the occasional single lithics found by the RAP surveys? Are they 'the tip of the iceberg' or not? And if so, what kind of iceberg?
- Can we obtain general distribution parameters for the 'lithics landscape' from a limited resurveying program based on a stratified sampling scheme?
- Which are the – personal and environmental – factors that have the most significant effect on our ability to detect lithics across the landscape?

The outcome and significance of the experiment will be discussed in detail, with special reference to the question of spatial scales as applied to landscape and site studies.

#### **A27.07: How to evaluate the potential of mesolithic scatters, example from Eastern Bohemia (Vysoké Mýto region)**

by **Katarína Čuláková** (Czech Academy of Sciences, Czech Republic)

For a long time, the presented region seemed abandoned during prehistory. But since 1989, a continuous surface survey is being conducted. During this time many sites from different periods were found. The most interesting is the settlement in the Mesolithic period. It is interesting because the amount of finds and density of the scatters, it is extraordinary in Bohemian context. In 2013, the processing of archaeological material was finished and an analytic surface survey was conducted based on the results of material analysis. The analytic survey was done only in selected locations, with the aim of finding the most suitable places for test pits, and possibly excavations. The areas selected for a surface survey were selected based on multiple criteria. As potentially interesting were chosen the scatters with most numerous collections, relatively rich scatters with smaller dimension, scatters with relatively higher amount of diagnostic pieces and scatters where only mesolithic settlement is known.

In this paper, we briefly present results of the analysis of material from the last 25 years. After this introduction, we will present the method of surveying and test pitting from 2013. Finally, we will discuss further possibilities of study of mesolithic settlement in this region.

#### **A27.08: Shapwick, Somerset, South-West Britain: the contribution of lithic scatters**

by **Clive Bond** (University of Winchester, UK)

Ten years of fieldwork across the Parish of Shapwick (1989-99), Somerset, South-West Britain recovered over 2,500 lithics from systematic field survey. Lithics were also recovered using other complementary field techniques. This paper will review the success of the different field methodologies deployed and discuss the different scales of analysis this approach towards understanding a total prehistoric landscape affords us. Both wet and dry archaeologies can be explored combing this project results and the former Somerset Levels Project archive. From fieldwalked grid, to excavation, test pit and shovel test pit, lithics make a major contribution to understanding the millennia of seasonal human settlement across this unique landscape.

## POSTER

### **A27.01-P-2: The importance of high resolution raw material attribution – spatial patterns of distinct Raw Material Units (RMU) of the Gravettian site Krems-Wachtberg (Lower Austria)**

by **Johanna Ziehaus** (OEAW – Austrian Academy of Sciences, Institute for Mediterranean and Prehistoric Archaeology, Austria), **Roswitha Thomas** (OEAW – Austrian Academy of Sciences, Institute for Mediterranean and Prehistoric Archaeology, Austria)

The Gravettian open-air site of Krems-Wachtberg has been under excavation since 2005. Based on the morphological attributes of lithic artefacts the site can be attributed to the Early Gravettian of Central Europe (Pavlovian, 30-24 ka BP). The poster presents preliminary results of the spatial analysis of lithics in archaeological horizon (AH) 4.4, a living floor which includes a well-preserved hearth.

High resolution raw material attribution was used which allowed separation of single nodules in certain distinct raw material units (RMU). Delimited find scatters, RMU refits and their attribution to different phases of the *chaîne opératoire* allow the distinction of activity zones and chronological sequences around Hearth 1.

Further, we compare spatial patterning of lithic scatters and refits in living floor AH 4.4 with the post-occupational deposition in AH 4.11.

Reference: R. Thomas, J. Ziehaus, Spatial and chronological patterns of the lithics of hearth 1 at the Gravettian site Krems-Wachtberg. *Quaternary International*, 2011. DOI 10.1016/j.quaint.2011.10.031

## Session A28

### Nobility versus artisans? The multiple identities of elites and 'commoners' viewed through the lens of materials and technologies during the European Bronze and the Iron Ages

**Saturday, 7 September 2013, 08:30–13:00**

**Room:** EU 102 (Building 1, ground floor)

**Organisers:** **Ann Brysbaert** (University of Leicester, UK), **Alexis Gorgues** (Université de Bordeaux 3-UMR 5607 Ausonius, France) and **Barbara Armbruster** (CNRS UMR 5608 TRACES, France)

In Bronze and Iron Age Europe hierarchic societies arose and developed technological systems/processes in the production of objects related to everyday use, on the one hand, and items of religious and symbolic character, on the other, while both types of objects may not always be clearly distinguishable. The establishment of technological domain systems differed in time and space during the latter part of prehistory.

This session deals with the question of how these productive systems/processes reacted to the demand connected with the elite's identities. Innovations and the development of new technologies designed to satisfy the needs of ostentatious behaviour and achieving prestige are key issues of the session. How can we identify the consequences of such processes and how can we define the role(s) that the craftspeople played in such contexts? The aim is to investigate the economic, socio-political, as well as the technological contexts and background of the make-up of material culture and technology in these periods. We intend to examine which role(s) artisans may have played in status and identity formation processes, in rituals and in symbolic performances, in other words, in each aspect of life and death of Bronze and Iron Age populations.

While this theme may be considered fairly traditional in its content by some, we believe that many aspects of the social interaction patterns between the different groups of people in those periods have not been adequately discussed and investigated yet, especially since the main emphasis in such debates primarily falls on the elites while artisans play equally important role(s) as well. This session, therefore, aims, first, to redress this imbalance and, second, to open up our thinking about the multiple social groups that may have been at work simultaneously in those periods.

#### **A28.01: Varna – The social and technological development of the earliest metalworkers**

by **Verena Leusch** (Affiliated Institute of the Eberhard Karls Universität Tübingen, Germany), **Raiko Krauß** (Eberhard Karls Universität Tübingen, Germany), **Ernst Pernicka** (Affiliated Institute of the Eberhard Karls Universität Tübingen, Germany), **Steve Zäuner** (Eberhard Karls Universität Tübingen, Germany), **Barbara Armbruster** (CNRS – Université de Toulouse II – Le Mirail, France)

Within a long-term research project funded by the German Research Foundation it was possible to gain a more detailed insight in the burial society from Varna (Bulgaria). The cemetery dates to the 5th millennium BC and still provides the first evidence of a large-scale metal production and a yet unknown level of social differentiation. Since the discovery of the site, archaeologists were intrigued by the early and yet so obvious interrelation between technology (especially metallurgy) – that becomes evident by the numerous and outstanding finds from the site – and the elites of the deceased. Until now only the richest and most extraordinary graves were investigated and published in detail.

During the last three years it has been possible to examine the archaeological material entirely. One focus was put on the investigation of the ca. 3.000 gold objects and an anthropological reinvestigation was conducted. The combination of all the available archaeological information and its statistical evaluation thus provided a new perspective upon the chronological and social development of the site. On this new basis we again try to approach the question of the progress and the final decline of the Varna society and the role of technology within this process.

#### **A28.02: Flaked stone tools from the open-air settlement of Minferri (2100–1650 cal. BC) (Lleida, Spain). First results.**

by **Dioscorides Marin** (Universitat de Lleida, Spain), **Antoni Palomo** (CSIC-CCHS/UAB, Spain), **Juan F. Gibaja** (CSIC-IMF, Spain), **David Ortega** (CSIC-IMF, Spain), **Natalia Alonso** (GIP/Universitat de Lleida, Spain), **Andreu Moya** (Iltirta Arqueologia S.L, Spain)

The primary interpretations of the emergence of the hierarchical societies at the end of the 3rd and the 2nd millennia cal BC on the Iberian Peninsula are based on the changes that imply the metallurgical processes of production among other phenomena of apparently relative importance. This implies that other categories of the archaeological record have not been studied yet in many cases, giving as a result, a wrong suggestion for the interpretation of the socio-economical changes that took place during this period.



Given that the flint tools studies are most often not included in the peninsular Bronze Age research, we want to develop a new way of approaching this archaeological record. Our methodology is focused on the origin of the siliceous raw materials documented on the sites, the technological characteristics, and, finally, the use of the prehistoric flint tools. This knowledge will let us understand more about the agricultural working processes and other production activities developed in the settlement of Minferri.

Finally, this information will be compared with other contemporaneous societies of the Iberian Peninsula and France, where the hierarchical social forms seem more developed and will be discussed in the context of the existence (or not) of State societies.

#### **A28.03: Sword and its Master. The relationships between the warriors and artisans during the Early and Middle Bronze Age in the area of Middle Danube**

by **Martin Bača** (*Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic*)

During the Early Bronze Age, in the area of Middle Danube, we register a phenomenon of graves in which, regarding its specific and sometimes even rich assemblage, the artisans were buried. In the traditional archaeological approach, it is presumed that some artisans especially the metallurgists stand as a privileged social class. However, during the transition to the Middle Bronze Age, it seems that the so-called warrior social class reassured and re-defined its position. In this chosen area, the main symbol of this class became the bronze sword. Along its symbolic value enhanced by the elaborate decoration, the sword was also a highly functional weapon which also served as artefact used for specific socio-religious rituals. That is why, during the Middle Bronze Age, the artisans faced new challenges – to produce the weapon that is rather difficult to make, with sufficient technological and symbolic value. In the paper I will therefore try to describe some possible relationships between these „elite“ classes – warriors and artisans that could have been in place in the area of the Middle Danube during the Early and Middle Bronze Age. I will show some chosen technological, symbolic and ritual outcomes that could be observed in the selected area.

#### **A28.04: Let them wear helmets: technological underpinnings of the evolution of Bronze Age elites in Southern Pannonia (Croatia)**

by **Sanjin Mihelić** (*Archaeological Museum in Zagreb, Croatia*), **Daria Ložnjak Dizdar** (*Institute of Archaeology in Zagreb, Croatia*)

The paper discusses the role craftspeople played in the shaping of group identity, often exemplified by trademark objects of material culture, above all prestigious goods as the preserve of elites. It is argued that, hand in hand with the elite-appropriated primacy in the socio-political and economic arenas of the world of latter prehistory, the mastery of technological know-how equipped the artisan class with a tool to influence, or sometimes even dictate cultural trends. The complex interplay between elites on the one hand and the craftspeople on the other comes to the fore in the prerogative of the latter to give shape to the different means of material expression of the dominant class. The argument is based on the evaluation of a range of Early to Late Bronze Age contexts from Southern Pannonia, with a special emphasis placed on the Urnfield metallurgical assemblages from Northern Croatia.

#### **A28.05: Aristocracy and craftsmanship – Preliminary results from a research project on economic, social and technological perspectives in the West Hallstatt Culture**

by **Barbara Armbruster** (*CNRS, France*), **Ernst Pernicka** (*Universität Tübingen, Germany*), **Maryse Blet-Lamarquand** (*IRAMAT-Centre Ernest-Babelon, France*), **Emilie Dubreucq** (*CNRS, France*), **Bernard Gratuze** (*IRAMAT-Centre Ernest-Babelon, France*), **Verena Leusch** (*Curt-Engelhorn-Zentrum Archäometrie, Germany*), **Thomas Hoppe** (*Landesmuseum Württemberg, Germany*), **Pierre-Yves Milcent** (*Université de Toulouse Le Mirail, France*), **Birgit Schorer** (*Universität Tübingen, France*), **Roland Schwab** (*Curt-Engelhorn-Zentrum Archäometrie, France*)

This paper deals with Early Iron Age fine gold and silver prestige objects and their production context. Through the study of craft and products it aims in understanding the social and technological development of the West Hallstatt culture (8th -5th centuries BC), which is characterized by fortified “aristocratic” settlements (“Fürstentitze”) and rich elite burial mounds (“Fürstengräber”). The French-German research project West Hallstatt Gold (financed by the French ANR and German DFG) intends to study the social dynamics and hierarchies, combined with craft specialisation during the Hallstatt culture by investigating prestige objects from elite burial sites. Fine metal work is especially suitable to reveal traditions and local innovations as well as foreign influences and exchange networks in arts and crafts, and between powerful members of the Early Iron Age societies. The interdisciplinary approach combines expertise in archaeology, archaeological science, technology, and experimental archaeology. It intends to set technological net-

works in their larger social, economic and political contexts to expand our understanding of cultural developments. It focuses on raw material sources, networks of crafts-people and craft traditions, asking how and why stylistic traditions, techniques and technologies of luxury objects change, and to explore the impact of this phenomenon on power relations of that particular period.

#### **A28.06: Metal craftsmen and aristocrats in West Hallstatt culture (630–425 BC)**

by *Emilie Dubreucq* (CNRS, France), *Pierre Yves Milcent* (Université Toulouse II-Le Mirail, France)

For Protohistory, the apprehension of metal craftsmen is essentially given through the study of their productions, the diversity of their artefacts and the level of technological know-how.

However, the study of archaeological structures connected to the technology of metal items, to the tools and the produced waste, offers a better view of the organization in the workshops and illustrates better the everyday life of the craftsmen.

The characterization of the structures of production linked to metalworking is an essential theme for the end of Hallstatt period.

This period is indeed a time of concentration of power and goods, visible through rich burials and major settlements. These settlements, often fortified on a hilltop, are viewed as princely seats. Many of them are surrounded by extensive suburbs with workshops: they should therefore also be considered as centers of crafts productions.

Through the question of organization of workshops and settlements, in connection with the study of productions and wastes of the everyday life of craftsmen and aristocrats, this paper will discuss the question of relationships between these populations during the Hallstatt period, in a context, for some sites, of an urban character.

#### **A28.07: Working for power. Highly specialized production in the Iberian world (VIth-Ist cent BC).**

by *Alexis Gorgues* (Université de Bordeaux 3-AUSONIUS, France)

Usually, power is linked to being able to monopolize someone else's work force: to have more power in order to work less, and to work less in order to spare time in participating in political competition. But archaeological data sets from the Iberian world do not fit too well with this well-known scheme. Evidence for highly specialized crafts can be found in elite's mansions, but not in ordinary houses, nor in buildings we can clearly identify as "workshops". A frequent interpretation of this phenomenon is that elites own production means, but the workforce is provided by dependents of lower social level, working within their master's house. We would like to challenge this idea, and defend the opposite point of view: that the workforce is provided by nobility's members themselves (as suggested by both domestic and funerary contexts), and that domination of highly complex technical knowledge is part of the elite's identity. Nobility mobilises such knowledge in order to monopolize the fabrication of complex artefacts they will use to build their social network, by redistribution and "don/counter-don" processes. We will finally see that they are probably not the only ones to act like this within protohistoric western Europe.

#### **A28.08: Objects to carry the warlord voice: the making of military communication vectors in the late Iron Age in Western Europe**

by *Alexandre Bertaud* (Université de Bordeaux 3-UMR 5607 Ausonius, France)

Military elites acquire their peak efficiency during fight. But to facilitate orders transmission and strategy, a warlord will need proper commandment tools. On the battlefield, musical instruments and banners play a crucial role to maintain leadership within the clash of arms. These objects are therefore strongly linked to a reduced number of individuals.

Some of these instruments have been found in excavations. They were made by highly specialized craftsmen. The main question is: who were the artisans that were able to create such objects? Were they intimately linked to military elites, directly dependent on the nobility? Were they "ordinary artisans" who were able, in some cases, to produce very specific items linked to the military activity?

We have observed the presence of military "transmission" tools, musical instruments or banners, during the last centuries before our era in France and Spain. So we can inquire in which ways military elites are represented on the battlefield and how the artisans were able to create such unique artefacts in reply to this request?

## POSTERS

### **A28.01-P-3: Ring decoration style of Dollkeim-Kovrovo culture in the context of exchange between local elites in Baltic region in Late Roman period.**

by **Olga Khomiakova** (*Institute of archeology of Russian Academy of Science, Russian Federation*)

Goods ornamented in Ring decoration style are prevalent in Sambian-Natangian culture from the Early phase of Late Roman period. Ring decoration types are able to be used as date elements as for they occurred in rather fixed periods of time. Pieces ornamented with rings find multitude parallels with regions of Vistula and the Islands of Baltic Sea and could be one of the evidences of contacts between the elites of Sambia, Scandinavia and Germania Libera.

### **A28.02-P-3: Finding of exceptionally rich cremation burial in Kratonohy (district Hradec Králové)**

by **Miroslav Pleska** (*Museum of Eastern Bohemia in Hradec Králové, Czech Republic*), **Pavel Horník** (*Museum of Eastern Bohemia in Hradec Králové, Czech Republic*), **Marek Pacák** (*Museum of Eastern Bohemia in Hradec Králové, Czech Republic*), **Miroslav Novák** (*Museum of Eastern Bohemia in Hradec Králové, Czech Republic*), **Jana Nácarová** (*Museum of Eastern Bohemia in Hradec Králové, Czech Republic*)

On August 11, 2012 in Kratonohy municipality (district Hradec Králové) has been found an interesting set of bronze artifacts and pottery fragments by an amateur associate of Museum of Eastern Bohemia in Hradec Králové. Latter rescue excavation conducted by the museum uncovered exceptionally rich cremation burial dated to Late Bronze Age (HB2-3). Entire burial was rescued in situ for further documentation and careful disassembly in laboratory conditions. CT scan and x-ray images depicted several hundred artefacts. Most of the artefacts are well-preserved miniature beads made from lustrure (in total 671 beads plus few hundred more fragments), and additionally 121 bronze buttons and 63 amber beads. Among the findings was also a unique bronze pendant. Whole assemblage was initially placed in to two vessels. It is unparalleled discovery in the settlement area of urnfield cultural complex. The amount of amber have no analogy in Czech Republic and indicates the presence of the important individual (shaman maybe) and also provides the evidence about remote contacts of local elites.

## Session A29

### Outstanding Biographies: The Life of Prehistoric Monuments in Iron Age, Roman and Medieval Europe

Friday, 6 September 2013, 08:30–13:00

Room: EU 108 (Building 1, ground floor)

**Organisers:** **Marta Díaz-Guardamino** (University of Southampton, UK), **Leonardo García Sanjuán** (University of Seville, Spain) and **David Wheatley** (University of Southampton, UK)

Some Prehistoric stone monuments accrued complex life-histories that spanned over millennia. Their ‘aura’ and material properties, namely, their large scale and durability, fostered their involvement in complex historical settings in which competing ‘world views’, cultural traditions and identities transformed them in places of especial significance. In these contexts, prehistoric monuments have played active roles in the institutionalization, contestation and negotiation of memories, ideologies, values and power relations. This session seeks to explore the role of prehistoric monuments in these processes of cultural and social production (i.e. hybridization, resistance, assimilation) through the adoption of a biographical approach. In particular, through the examination of the biographies of selected paradigmatic megalithic monuments, stelae and statue-menhirs, and Rock Art sites in various regions of Europe, this workshop will be aimed at examining the role played by some prehistoric monuments in the unfolding of the complex social processes that lie behind traditional concepts such as ‘Orientalization’, ‘Romanization’ or ‘Christianisation’.

#### A29.01: Kings’ Jelling

by **Steen Hvaas** (Danish Agency for Culture, Denmark)

The most stately and noble monument in the history of Denmark is the Jelling Monuments. It consists of the two largest mounds in the nation and two runic stones dating from the Viking Age and the church situated between the burial mounds. Since 2005, new excavations have expanded the monument area with the discovery of a huge stone-ship measuring almost 360 meters in length and a four-sided wooden palisade, which once encircled a ground area of approximately 12 ½ hectares. The Northern Mound with a burial chamber is the center for both the stone-ship and the entire expanse of the newly discovered palisade.

More than thousand years ago, the monuments in Jelling were created in order to show the future: – Here, the country was gathered into one kingdom. – Here, the name “Denmark” appears for the first time. – Here, Christianity became the official religion of Denmark. – Here, the King – the progenitor of the current Danish house of royalty – was presented. – Here, stands the symbol of the founding of the Danish nation. – Here, the change from a Nordic pagan society to a European Christian civilization is marked.

#### A29.02: Icons of Antiquity: Remaking Megalithic Monuments in Ireland

by **Gabriel Cooney** (University College Dublin, Ireland)

Megalithic monuments are a distinctive feature of the Neolithic and the beginnings of the Early Bronze Age in Ireland. Four major types of megalithic tombs have been recognised and over 1500 of them are visible in the Irish landscape today. In archaeological categorisation and interpretation much of the focus has been on the ‘primary’ construction and use of these monuments but archaeological excavations demonstrate that they have complex and varied site histories, which continue up the present. The names attributed to the sites in folk tradition indicate they were often explained in terms of mythological tales that were first written down in the early historic period.

This paper explores the afterlife of megalithic tombs in Ireland in later prehistory and the early medieval period with particular reference to three major passage tombs in the Boyne Valley area ; Newgrange, Knowth and Tara. Major excavations by O’Kelly (Newgrange), Eogan (Knowth) and O’Riordain/de Valera (Tara) demonstrate that these sites and their immediate landscape settings had very different histories in the Iron Age and medieval periods. These site histories are relevant in understanding the varying ways in which megalithic tombs were understood and actively used in later times.

### **A29.03: The Outstanding Biography of Eliseg**

by **Howard Williams** (University of Chester, UK)

This paper presents the initial results and preliminary interpretations of a new archaeological research project involving Bangor University and the University of Chester that is exploring the outstanding biography of an outstanding early medieval monument. The Pillar of Eliseg survives as a fragment of an early ninth-century cross-shaft bearing a long and historically significant Latin text, situated on an earlier oblong mound near the thirteenth-century Cistercian abbey of Valle Crucis near Llangollen, Wales. Exploring the mound beneath the cross-shaft for the first time, three seasons of fieldwork conducted between 2010 and 2012 augmented previous research to reveal that the early medieval cross was originally situated upon a multi-phased kerbed cairn of Bronze Age date. Both mound and cross were then subject to successive alterations, adaptations and reinterpretations to the present day. Using this case study, the paper outlines an outstanding biography of over four thousand years, but also explores the potential and limitations of applying a 'biographical approach' in field-based archaeological research into composite multi-period monuments of this kind. In doing so, the outstanding and tenacious character of the Pillar of Eliseg's biography becomes even more apparent.

### **A29.04: The myth of the "real" Avebury**

by **David Wheatley** (University of Southampton, UK)

The monuments at Avebury, Wiltshire, appear as extraordinary today as they did to Stukeley, who documented the site in the 1720s. Although the Druids of Stukeley's interpretation may now have gone, however, it might be argued that his theoretical project has remained. It came closest to being realised by Keiller who re-erected many of the stones in their "original" positions in the 1930s, perpetuating the pervasive idea that there was a real "finished" Avebury to be recovered and reconstructed.

But Avebury cannot be isolated in a single moment in the past. The stones were brought from former positions within an inhabited landscape and must have been redolent with meaning before they arrived at Avebury while the burial and burning of many of the stones in later periods cannot be understood as religious or commercial vandalism, but as complex social actions in the context of the site's evolving biography.

This paper will examine the conceptualisation of Avebury as a monument constructed, finished, destroyed and finally reconstructed and argue it is better conceived as successive re-engagements with a place whose biography may not have been understood, but was surely instrumental, to those who influenced the remains we see today.

### **A29.05: Les Pierres de Memoire: the Life-history of Statue-menhirs in Guernsey**

by **Heather Sebire** (English Heritage, UK)

Many prehistoric monuments survive in the landscape and are revered by later generations but there is a special category of artefacts and monuments that reflect images of ourselves. On Guernsey in the Channel Islands just off the north-west coast of France, an exceptional form of anthropomorphic menhir is found. Two statue-menhirs or standing stones survive which represent female figures. It is particularly surprising that these exceptional human representations should be found in Guernsey, the most westerly of the Channel Islands. These menhirs have witnessed a long history and have been re-carved in modern times in an attempt to Christianise them. One has even been given the local nickname of the 'Gran'mère'.

This paper will consider the biography of these statue-menhirs and how different generations have reacted to them and whether the power of the human representation has ensured their survival. Consideration will be given to the local reaction to these monuments and how they contribute to the world view of those who observe them.

### **A29.06: Back and forward: Neolithic standing stones and Iron Age «stelae» in French Brittany**

by **Luc Laporte** (CNRS, France), **Marie-Yvane Daire** (CNRS, France), **Elias Lopez-Romero** (University of Durham, UK), **Gwenolé Kerdivel** (University of Nantes, France)

Standing stones are mainly related to the Neolithic period in Western France. From a wider perspective, Iron Age Stelae of Brittany could be understood as one of the ultimate developments of Atlantic Megalithism. The separated distribution of Neolithic standing stones and Iron Age stelae from Côte d'Armor intrigues: may have the second reused some of the first? The carving of Iron Age stelae developed during less than three centuries, and it was followed by several episodes of destruction and transformation, also of megalithic tombs. Did Late Iron Age demographic growth, unequalled before, impact the distribution of such monuments? Many authors have tried to estimate the modern

destruction of such monuments but very few have examined the role that past societies may have played on them. Neolithic standing stones were erected during several millennia, with unequal frequency in time and constant adjustments in space and forms. Going forward, such perspective could contribute to highlight the symbolic and social significance of the phenomenon. Going backwards, we can wonder whether it could not help us to fill in some gaps in the current distribution of Neolithic standing stones in Brittany. A very first step toward regressive history applied to Prehistoric and Protohistoric periods?

**A29.07: From a Neolithic center of power to the dawning site of a kingdom of the Early Middle Ages (737 AD): the case of the dolmen of Capilla de Santa Cruz (Asturias, Spain)**

by Miquel Àngel de Blas Cortina (University of Oviedo, Spain)

In 737 AD, Favila, king of the emerging Christian monarchy of Asturias, consecrated a temple in honour of the 'Holy Cross'. The odd location of the building, on a small hill nearby the river Sella, could be understood by the end of the 19<sup>th</sup> century AD: the presumed hill was the mound of a dolmen with painted and engraved orthostats. The superposition of the temple over the megalith may not be simply interpreted as the customary Christianisation of a pagan sanctuary. Rather, it may be seen as the appropriation by a still incipient Kingdom of Asturias of the ancestral power of a place that had been key for the communities of an extensive territory during the 4<sup>th</sup> Millennium BC. The fusion church-megalith stands out as a plausible mechanism used by a group of nobles to legitimate their aspirations within the creation of a sovereign kingdom. The existence of roman funerary epigraphs, the dividing role of the river Sella between the Asturian and the Cantabrian peoples during pre-roman times, and the use of the mound and its surroundings as a cemetery during the High-Late Middle Ages, reinforce the hypothesis of the enduring influence emanating from this peculiar prehistoric tomb throughout millennia.

**A29.08: Outstanding biographies in southern Iberia: Exploring the life of some Prehistoric monuments in the First Millennium AD**

by Leonardo García Sanjuán (University of Sevilla, Spain)

In Iberia some Prehistoric monuments display complex life-histories that span throughout several millennia, well into what are conventionally seen as "historical times". The available empirical evidence for these sites is often scant and fragmentary. In addition, little attention has been traditionally paid to them as valuable case-studies to understand cultural continuities. This paper discusses the use in the 1<sup>st</sup> millennium AD of some prehistoric sites, including megalithic monuments and rock art complexes, that had been founded or established in the Neolithic or Copper Age periods (5<sup>th</sup>-3<sup>rd</sup> millennia BC). The ultimate aim of this discussion is to provide the basis for a more informed analysis of the role played by some prehistoric sites of special significance in the unfolding of social processes in Roman and Medieval Iberia.

**A29.09: Signs of their Times: The Life of Prehistoric Stelae and Statue-Menhirs in Iron Age, Roman and Medieval Iberia**

by Marta Díaz-Guardamín (University of Southampton, UK)

In various regions of the Iberian Peninsula, prehistoric communities made and erected stelae and statue-menhirs to recollect their past. These monuments were set up in the landscape, in carefully selected places in which, as some evidence suggests, various ritual activities were deployed. These durable and, at times, large scale stones are conspicuous signs of the past and, as such, have been actively involved in the re-production of long lasting social memories and ideologies, while providing resources to deal with struggles over identity and power throughout Later Prehistory, Early Antiquity and beyond. This paper offers an outline of the life of prehistoric stelae, statue-menhirs and the places where they were set during the Iron Age, the Roman era and Middle Ages in the Iberian Peninsula. This overview is limited by the fragmentary and poor quality of the available data. However partial, this evidence provides relevant insights into particular episodes which, either as isolated events or as part of more broadly patterned practices, may be considered as 'signs of the times' of the societies in which they took place. Among others, episodes related to the achievement of legitimacy, the contestation of power and the negotiation of identity will be presented.

#### **A29.10: Understanding past people's images of the past through their manipulation of prehistoric monuments**

by **Estella Weiss-Krejci** (*Austrian Academy of Sciences, Austria*)

Reuse, manipulation and modification of ancient tombs as well as single orthostats during later time periods is a frequent phenomenon throughout Europe. These manipulations – often following extended time spans of disuse – encompass visits and the deposition of objects at tombs, the placing of freshly deceased or exhumed dead bodies in much older burial structures, monument destruction, incorporation of monuments into new buildings and their total modification and reinterpretation. Using selected examples from western (British Isles, Iberian Peninsula) and central Europe (Germany, Austria) this paper aims at a classification of various types of manipulations of prehistoric stone monuments and discusses their potential meanings. As the attitudes to prehistoric monuments were not static, a focus on the actors and their behaviors provides a means to learn about ancient people's changing societal ideals and images of the past. While the construction of collective memory frequently seems to play a strong role, forced attempts to erase the memory of the past can also be detected.

#### **A29.11: Life and death of Copper Age monoliths at Ossimo Anvòia (Val Camonica, Italian Central Alps), 3000 BC–AD 1950**

by **Francesco Fedele** (*University of Naples 'Federico II' (1980–2011, retired), Italy*)

Excavations in 1988-2004 at Ossimo Anvòia (Borno Plateau) revealed a Copper Age ceremonial site with statue-menhirs and other monoliths in their original position, in addition to abundant monolith fragments from later reuse. Several monoliths had complex life-histories representing a pivotal aspect of ideological activity during the 3rd millennium BC. A particular feature was an unusually large pit with well-preserved charcoal (F18), which housed a fallen monolith (M9) showing complicated reshaping. In 2007-2011, AMS radiocarbon measurements combined with detailed spatial study and charcoal analysis determined that the burning event occurred in the 4th century AD, ie, during the final period of pagan cult, not in prehistory. After the removal of its animal imagery M9 was also re-erected, and several statue-menhirs lying nearby were treated in a related way. The evidence points to a rediscovery of the ancient site after complete abandonment for 2500 years. Further work on the evidence is unfolding other 4th century manipulations. Subsequently, the Anvòia monoliths were widely exploited as a prized-stone quarry in connection with the building of animal pens (AD 1500-1950), two of which were excavated. Anvòia thus provides a unique opportunity for examining the changing roles of prehistoric monoliths across five millennia and several phases.

#### **A29.12: What happens when tombs die? The historic afterlife of the Cretan Bronze Age tombs.**

by **Borja Legarra Herrero** (*University College London, UK*)

The Early and Middle Bronze Age constituted a peak in the use of cemeteries on the island of Crete. These became important social arenas that were marked by large architectural programs. Once they fell out of use its significance in the intensively lived landscape of Crete did not disappear as they constituted visible reference points for much longer periods of time, in some cases even until modern times. Unsurprisingly, the sites were revisited and reused in historical times for several purposes. The presentation examines the different ways in which the prehistoric tombs were incorporated to the consciousness of the Early Iron Age and Classical communities on Crete: to what extent the funerary character of the tombs was remembered and respected, and whether the prehistoric tombs helped to establish certain idiosyncratic choices in the Early Iron Age and Classical funerary behaviour of Cretan communities.

## Session A30

### Partners – Rivals – Enemies. Archaeological record of interaction between two differently structured entities and its interpretation variability

Friday, 6 September 2013, 08:30–16:00

Room: UU 407 (Building 2, 4th floor)

**Organisers:** **Balázs Komoróczy** (Academy of Sciences of the Czech Republic, Czech Republic), **Thomas Grane** (Frederiksberg, Denmark) and **Jiří Musil** (University of West Bohemia in Pilsen, Czech Republic)

The example of the Roman Empire and tribal barbarian communities living beyond the Roman world during the first four centuries AD reflect complexity and ambivalence of relations between two structurally different worlds. Spatially and temporally variable political powers, social and economical parameters of the barbarian tribal structures on the one hand and development dynamics of the complex society on the other constitute specific conditions for development of mutual interrelations. It is endemic, that archaeological science in the former barbarian territories, stretching from the Great Britain through the Scandinavia up to the northern Pontic region, delimitates itself by interpretations of these relations. Usually, the fundamental constructions of historical development in the individual regions, including chronological and ethnical identification issues, are derived solely from archaeological and written sources of mutual relations with the advanced civilization, they had never been part of. This tradition of following and interpretation of interrelations methodologically connects through the research in the individual European countries and regions. Frequently, this approach leads to a higher rate of generalization that may not always reflect specific local context of archaeological record, which necessarily assign different interpretation possibilities to seemingly identical manifestations of interactions. The intention of the session is to present evidence and a confrontation of individual manifestations of wide range of forms of interaction, particularly in the barbarian parts of the European continent during the 1st half of the 1st millennium AD. The objective dwells above all in identification of archaeological record of the relations, including political and business relations and all sorts of confrontations, as well as broad discussion of its interpretation possibilities.

#### **A30.01: "Formasque quasdam nostrae pecuniae agnoscunt atque eligunt"? Coinage and north European barbarian society in the first centuries AD.**

by David Wiig-Wolf (*Deutsches Archäologisches Institut, Germany*)

Coins were among the most prominent and numerous Roman objects exported to the barbarian territories of northern Europe, and have been the subject of much attention. Interpretations range from seeing them as the result of trade contacts to their being evidence for the payment of subsidies to ensure the safety of the Imperial frontier. Others have seen confirmation of Tacitus' statement that the Germans near the limes were acquainted with their everyday use. However, with the growing realisation that coin distribution and use could vary greatly between even neighbouring areas within the Empire, it is clear that there can be no mono-phenomenal interpretation of the presence and use of coinage in the Barbaricum. Similarly, the increasing acceptance of anthropological models among numismatists has furthered an awareness that coinage can have a multitude of uses and that its adoption can have a profound effect upon the functioning of society.

This contribution will consider the differential occurrence of Roman coinage in the Barbaricum, in particular in relation to patterns found within the Empire; the function and use of coins in the Barbaricum; as well as models for how their introduction will have affected barbarian society and how barbarian society reacted.

#### **A30.02: Roman militaria in southern Scandinavia in the 1st century AD – context and recontextualization**

by Xenia Pauli Jensen (*Moesgård Museum, Denmark*)

Even though southern Scandinavia was never part of the Roman Empire, large quantities of Roman or Provincial Roman military equipment have been found in the area. The earliest material reached southern Scandinavia around the birth of Christ. Both in the weapon deposits and burials, Roman militaria is almost exclusively linked with swords, especially sword blades, scabbard fittings and baldrics.

This paper concentrates on what happened after the militaria arrived in Barbaricum, to be exact: how they were used, repaired and not least how the Roman militaria served as inspiration for local developments of material culture.



### **A30.03: No longer 'random' or 'intrusive': interpreting Roman material as meaningfully constituted within the later Irish Iron Age (AD1–500)**

by **Jacqueline Cahill Wilson** (*The Discovery Programme, Ireland*)

Over the past fifteen years scholars have started to critically assess the nature and extent of Roman influence on communities in Ireland in the later Irish Iron Age (AD1–500). The traditional culture-historical narrative was problematic based as it was on an idealised retrospective of the independent and indigenous nature of "Celtic" society in late Iron Age Ireland. Contemporary methods of analysis and interpretation were needed to investigate finds of Roman material in Irish contexts, and to explore the potential impact of direct engagement on the social, economic, religious and political changes taking place among communities in Ireland during this period.

The Discovery Programme, Ireland's institute for advanced research in archaeology, initiated an 18-month pilot project in September 2011 in order to assess the current state of knowledge and scholarship on this formative period of early Irish history. The initial module of the LIARI Project was completed in March 2013 and investigations will now continue with a further two years of dedicated research. This paper outlines our preliminary findings and how these offer new insights into the networks of engagement and embedded social relations between Ireland and the Roman world.

### **A30.04: Native military interactions before and during the Roman conquest**

by **Alexandre Bertaud** (*Université de Bordeaux 3-UMR 5607 Ausonius, France*)

During the last times before the Roman conquest, we observe many interactions between late prehistoric societies of continental western Europe. These interactions, visible in goods exchanges in long range, as the silver phiale found in Vielle-Aubagnan in Aquitaine (France) probably from Tivissa in Catalonia (Spain), occur in a more unexpected manner in the warrior behaviour. Indeed, it seems that prehistoric people from Peninsula Iberica have used weapons from other cultural areas such as italics helmets called Montefortino, and what interests us particularly, iron helmets and latenian swords from temperate Europe and probably from Gaul. Further, Caesar tells us that during the Aquitaine rising in 56 B.C., hispanics warlords join the north Pyrenean troops against Rome.

These elements allow to understand of warrior's interactions between cultural groups from the end of the Iron Age in Gaul and Iberian Peninsula across the study of weaponry in context of discovery. We will try to understand what are the terms of exchanges and borrowing, *interactions*, in the particular domain of warfare before and during the Roman conquest of the western Europe area.

### **A30.05: Forms of Roman-Germanic Interactions between the Rhine and Danube**

by **Hans-Ulrich Voss** (*Deutsches Archäologisches Institut, Germany*), **Claus-Michael Hüssen** (*Deutsches Archäologisches Institut, Germany*)

The upland area between the Rhine and Danube, Lippe and Naab was the surgical area of Roman armies and residential areas of various Germanic groups, sometimes within sight of the Roman towns and garrisons. Based on the fund spectra of Roman material goods it is possible to draw an increasingly detailed picture of the Roman-Germanic interaction in that space from the time of the Germanic wars of Augustus until Late Antiquity. Spectacular discoveries (Waldgirmes, Hedemünden, Harzhorn) and the systematic collection of relevant finding good illuminate the diverse strategies of such diverse neighbors in dealing with each other.

In the Barbaricum reflect the burial customs, far more so in the meantime, however, a reference spectrum of the settlements, the influence of Roman culture on the gentil organized communities of the "Barbarians", who, according to the archaeological record very specifically and deliberately responded.

### **A30.06: Romans and Barbarians: some considerations**

by **Eduard Krekovič** (*Philosophical faculty, Comenius university, Slovak Republic*)

Author deals with the relationship of Romans and barbarians as reflected in historical and archaeological sources. There will be also a comparison of this relationship with Germanic and Sarmatian tribes. Some acts of war are considered as the absence of law succession among the barbarians. It seems that the Roman were afraid from the Germans more than from Sarmatians.

### **A30.07: Peace and war at the borders. Archaeological record of interactions between the Roman Empire and Germanic chiefdoms north of the Middle Danube.**

by **Balázs Komoróczy** (*Institute of Archaeology of the Academy of Sciences of the Czech Republic Brno, Czech Republic*)

During the first four centuries AD the region north of the Middle Danube was in close neighbourhood with geographically the most extensive and immensely powerful state formation – the Roman Empire. This coexistence was spatially so close, that the both of profoundly distinctive structures were separated only by relatively easily crossable river Danube. Spatial proximity of the complex society on one hand and the Germanic tribal society structured in more or less stable chiefdoms on the other, is accompanied by considerable intensity of mutual contacts with wide range of their manifestations. Apparent inequality of the both sides contains embedded high potential of various conflicts, violence or interference on basis of power superiority. Archaeology of the Roman Period in the region also considers the large part of its sources from perspective of such relations. Amongst others important sources there are counted artefacts of the Roman origin found within the Germanic context, so-called imports. The region of interest also disposes of numbers of evidences of direct intrusions of the Roman power to the barbarian territories. The basic interpretation possibilities of both categories of sources of information stand as subjects of the presentation.

### **A30.08: Marcus, Mušov and the Marcomannic Wars**

by **Thomas Grane** (*University of Copenhagen, Denmark*)

In the middle of the 2<sup>nd</sup> century AD, the Marcomannic Wars dominated the political scene of the Roman and Germanic worlds. These wars took up most of the reign of the emperor Marcus Aurelius. The reasons for the wars and the effects of them on both sides of the Danube have been explained partly from literary sources. In fact, the literary sources to the event related to the wars are quite comprehensive. In the epicentre of the events, we find the richly equipped élite grave at Mušov in the Czech Republic. This grave was published in 2002 and is crucial to the understanding of affairs of the Upper Danube region during or before the wars. This paper will attempt to place the Mušov grave in a socio-political context relating to the effects on both the Roman Empire and the Germanic societies of the Marcomannic Wars.

### **A30.09: Maroboduus – Ballomar – Fritigil. Possibilities of interpretation of archeological resources for deeper recognition of Marcomanni elite on a background of Roman-Germanic relations**

by **Eduard Droberjar** (*Palacký University in Olomouc, Czech Republic*)

The author of the text is bringing up a several possibilities of interpretations of archeological resources, useful for deeper recognition of Marcomanni elite, in context of three personalities (Maroboduus, Ballomar, Fritigil), three fault events (Maroboduus Empire, Marcomannic Wars and beginning of Migration Period) and three important territories for Marcomannic History (Central Bohemia, Southern Moravia, Lower Austria). When particular attention will be paid to highest elites as barbaric kings who were under a strong Roman influence. A progressive steps of migration of centers of Marcomannic powers going from Bohemian Elbe region to Danube region in Austro-Moravian border region, getting closer to Roman limes, is best documented by three key localities (from Dobřichov-Piřchora, through Mušov/rich grave, to Oberleiserberg). Potential elements of Romanization, same as diplomatic and trading relations in Early Roman Period in Central European barbaric lands, will be analyzed through prestigious finds, rich graves, Roman imports, evidences of transfers of Roman technologies and other influences on antique civilization. The end of the Roman era and the beginning of the Migration period is already associated with infiltrations of various barbarian communities, with decline of Roman-Germanic relations, and gradual departures of Marcomans and also with the name of their first queen – Fritigil.

### **A30.10: Analyses and Evaluation of Spatial Aspects of the Roman Military Invasions to the Barbarian Territories**

by **Marek Vlach** (*Institute of Archaeology of Academy of Sciences, Brno, Czech Republic*)

The Roman military invasions on the barbarian territories represent characteristic area of archaeological research. Dynamics and structure of such events contain specific theoretical issues. Logistics and organization of the military campaigns inevitably involved full consideration of wide array of aspects, among others mainly the settlement structure, geopolitical conditions and geomorphological structure of invaded regions. Spatial context naturally played important role and the recent development of computation techniques offer various approaches to its analyses. Implementation of methods from area of geomorphometry may uncover empirically uncovered structures and methods of complexity analyses and modelling mediate spatiotemporal evaluation of such structures. The main geographi-

cal concern dwells in the Middle Danube regions, which provide various types of evidences of Roman military presence within the local Germanic context.

### **A30.11: About ways and forms of Roman-Barbarian interactions in light of Roman provincial “Imports” from east of the Roman Province Dacia**

by **Alexandru Popa** (*National Museum of Eastern Carpathians, Romania*)

In this presentation the author intends to analyze some aspects of the relations between the Roman Empire and non-roman populations. The discussed territory is the region between the Carpathian Mountains and Dnestr River that was inhabited during the existence of the Roman province Dacia by various non-roman populations, among them the well known Dacians and Sarmathians. The dynamic of the development of these groups was influenced by various social and political factors, including numerous interactions with the Roman Empire. As a result, numerous Roman products arrived to Barbarian territories. Some of these artifacts (as eg. weapons, metal and ceramic vessels, coins, etc.) were even reproduced in the Barbarian workshops. We have proofs that confirm the existence of glass craftsmen, which produced glass vessels or mason craftsmen, which reproduced Roman stone buildings far from the Roman boundaries. Based on archaeological artifacts and written sources we now have the opportunity to reconstruct the evolution in time and space of the economic and politico-military interactions between the Roman Empire and its Barbarian neighbours.

### **A30.12: The pottery production center from the Roman Age Barbaricum from Medieșu Aurit – Șuculeu (Northwestern Romania)**

by **Robert Gindele** (*Satu Mare County Museum, Romania*)

The settlement of Medieșu Aurit is located in Northwestern Romania, in the Barbaricum, on the Someș Valley, at ca. 75 km as the crow flies from the Roman town of Porolissum. The research at Medieșu Aurit – Șuculeu began in 1964 and during a three years excavation 10 pottery kilns with median wall were discovered. The research was reloaded in 2008 using modern methods as aerial photography and geomagnetic prospections. As a result, on a 18 hectare surface more than 200 pottery kilns were identified. In 2011–2012 archaeological excavations which took place confirmed the results of geomagnetic measurements. The pottery production center from Medieșu Aurit is at present the biggest pottery production center in the Central European Barbaricum. In the future, we aim to analyze the impact of this center on the formation of the pottery production centres in South Poland belonging to the Przeworsk culture.

### **A30.13: Numeri Britonum and Odenwald Limes**

by **Michal Dyčka** (*Charles University in Prague, Czech Republic*)

The paper will be devoted to the question of manpower on Roman frontiers. In the spotlight will be the Numeri Brittonum on the Odenwald Limes in Upper Germany. The special attention will be paid to the question of origin of these semi-barbarous units, which is frequently situated to the area of nowadays Scotland.

The author will also notice the way these units could manage their part of the frontier and why they were designated to the relatively remote part of Germania Superior. There can be found visible notable links and parallels to the Antonine Wall in this subject, therefore they will be discussed in the report.

There are also certain hints, that the recruitment of Numeri Brittonum was directly associated with Roman campaigns in Scotland during Flavian times. Shortly after Flavian occupation of Scotland the forts occupied by Numeri Brittonum units arose in the Odenwald section.

In the conclusion, the author will try to summarize what the example of Numeri Brittonum can tell us about the ways how the Romans managed their frontiers in first two centuries AD and what kind of relationship they could have to the British tribes – once enemies, then recruits for an Imperial Army.

### **A30.14: Settlement in El-Hayz Oasis during the Roman Period**

by **Jiří Musil** (*Faculty of Arts, Charles University, Czech Republic*)

Located in the Egyptian Western Desert, El Hayz represents an independent southern part of the larger Bahariyah Oasis. The exploration of El-Hayz Oasis was supervised by Czech Institute of Egyptology since 2003. Many findings from realised surface survey as well as discovery material from archaeological research concerning inhabitation in the

vicinity of El-Riz fortress and also village settlement (Bir Showish, Ayn Umm Chabata) classify these localities as Roman period, especially its late phase when El-Hayz oasis served as agricultural background of central part of Bahariyah Oasis. Investigation of settlement, culture and life environment in El-Hayz Oasis continues even in nowadays. The paper would bring new knowledge of monitored area and would put it into broader context of Egyptian Western desert in the Roman period.

#### **A30.15: Trade Routes and Economic Situation in Egyptian Western Desert during the Late Roman Age**

by **Stanislava Kučová** (Charles University, Czech Republic)

The paper is mapping trade routes and economical situation in the Egyptian Western Desert and Mediterranean region during the Late Roman Age. It traces ancient caravan routes in the Western Desert (among Western desert oases – Bahariyah, Dakhla, Kharga, Siwa, Farafra – and between oases and Nile Valley, Libya, Sudan and Mediterranean shores). Its goal is to evaluate the relationships among regions and their character. The possibility to study ancient trade communications is enabled by the collections of Ancient Greek authors, 19th and 20th centuries archeologists, recent and contemporary archaeological expeditions, epigraphical and written data sources together with modern investigation in the field of transport amphorae – their traffic in Mediterranean is important for contacts estimation comprising Egyptian Western Desert, Nile Valley, Roman Empire and Northern African shore. The project would also contribute to deciphering patterns of trade politics in the Late Roman age and the Ancient world.

#### **A30.16: El-Hayz Oasis in Egyptian Western Desert in Medieval Times**

by **Martin Tomášek** (National Heritage Institute, Czech Republic)

Part of El-Hayez project, investigating settlement, culture and life environment in Late Roman locality Bir Shawish in broader context of Western desert is exact characteristic of newly acquired medieval, Coptic and Islamic component of settlement.

Lecture would be focused on medieval component that would enhance comparison of development with settlement of Bir Showish and generally the late Roman horizon. The questions about dilapidation and transformation of marginal regions of settlements belong today among actual problems of European archaeology of medieval times with important transcend into Northern Africa and also Near East. Given its span it is for the first time the attention would be paid to the medieval settlements in this area.

## Session A31

### Persistent economic ways of living – Production, Distribution, and Consumption in the Iron Age and Early Medieval Period

Thursday, 5 September 2013, 14:00–18:30

Room: UU 407 (Building 2, 4th floor)

**Organisers:** Alžběta Danielisová (Institute of Archaeology CAS, Czech Republic), Manuel Fernández-Götz (Landesamt für Denkmalpflege Baden-Württemberg, Germany) and Kerstin Kowarik (Naturhistorisches Museum, Austria)

This session aims to focus on long-term economic structures which are closely related to the social structure and organization of past societies. Exploitation of natural resources, together with agricultural and craft production, are the most important aspects for the gradual growth of social complexity. Extended focus on subsistence strategies involving beside actual food production also redistribution, exchange, and specialisation are among the most intriguing themes in archaeology. The real challenge, however, is to explore and understand the ways how resources were exploited and managed and what social, political and cultural institutions organized and structured them.

Unfortunately, such questions are usually dealt with only in scope of individual time periods or geographic regions. In this session we seek to broaden the investigation of economic aspects of societies by bridging research topics from different places of origin. Although seemingly different, they in fact share many fundamental issues showing strong underlying continuities despite their various cultural identities.

The aim of this session is to find inspiration for further development of theories concerning past exploitation of environment, natural resources and production and distribution processes from Iron Age to Early Medieval period. We would like to discuss economic themes which transcend time and space and bring together different research experiences.

Archaeological and interdisciplinary case studies concerning complex research projects as well as individual research topics are welcome. We encourage participants to present papers that focus especially on:

- Production and consumption aspects of subsistence strategies related to the interactions of central places, common settlements and their environments (material collections, settlement structure, environmental data).
- Exploitation of natural resources and redistribution processes (mineral ores, salt, forests, charcoal, potter's clay, etc.).
- Complex craft production processes, technology transfers, chaînes opératoires etc. in different social environments (centres, country side, marginal areas...).
- Exchange and redistribution mechanisms.

#### A31.01: Economic Archaeology: Its Social and Political Dimensions in Later Prehistoric and Historic European societies

by John Bintliff (Leiden University, The Netherlands)

Changes in society can occur through the impact of developments in economy and production, but sociopolitical transformation in itself can also lead to major impacts on the economy. Most often these spheres are closely interacting. This paper will use case studies from European later prehistory and historical times to investigate how new forms of society are both created by and stimulate new modes of economic life.

#### A31.02: Resource Cultures – Socio-cultural Dynamics in the Use of Resources

by Martin Bartelheim (Universität Tübingen, Germany)

Resources are defined as the tangible and intangible means by which actors create, sustain or alter social relations, units or identities. This definition abolishes the opposition between “natural” and “cultural” resources because even raw materials extracted from nature are subject to cultural constructions. It is further assumed that resources are normally not used as individual elements, but as part of “resource complexes” which are often combinations of things, persons, knowledge and practices. Based on this approach, “resource use” here refers to the opening up and exploitation as well as the processing, distribution and utilization of socially relevant resource (complexes). It leads to certain dynamics, i.e. multidimensional processes of change, which may affect individual parts or even the whole of society. Resources, the use of resources, and the resulting dynamics strongly depend on cultural ideas and practices. These cultural preconditions are variable and define what resources are and how they are used.

### **A31.03: Early Iron Age Production and Consumption at the Heuneburg (southwest Germany)**

by **Manuel Fernández-Götz** (Landesamt für Denkmalpflege Baden-Württemberg, Germany), **Gerd Stegmaier** (Landesamt für Denkmalpflege Baden-Württemberg, Germany)

The Heuneburg on the Upper Danube is one of the most important and best researched sites from the Early Iron Age. Apart from the wealthy burials in the surrounding area, the monumental fortifications, and the extensive stratigraphy of the settlement, there is also a great deal of evidence for specialised production and imports from very differing parts of Europe. Between the 6th and early 5th centuries BC the Heuneburg constituted an important centre of production, distribution and innovation, where goods such as pottery, fibulae and textiles were produced. Some specific types, such as the characteristic red-white painted pottery, seem even to have been produced at the Heuneburg itself and then distributed over a wide area. Moreover, the latest isotope analyses of the animal bones have produced interesting results about the provision of the central place during the various settlement phases. Finally, finds from areas such as Slovenia, Etruria and the Greek world demonstrate the wide-ranging contacts of the Late Hallstatt period inhabitants of the Heuneburg. The fact that some Mediterranean forms and techniques were imitated, or even adopted, by the native craftsmen emphasises the important role of the settlement within the context of Early Iron Age knowledge networks.

### **A31.04: Apprehending continuity and discontinuity in Iron Age soil occupation and rural landscapes: the second Iron Age settlement database**

by **François Malrain** (Inrap Nord-Picardie (UMR 8215 Trajectoire), France), **Geertrui Blancquaert** (DRAC-SRA Champagne-Ardenne, France), **Thierry Lorho** (DRAC-SRA Bretagne (UMR 6566/CreAAH), France), **Chantal Leroyer** (Archéo-Sciences (UMR 6566/CreAAH), France), **Patrice Ménéiel** (CNRS, UMR 6298 ARTheHIS, France), **Véronique Zech-Matterne** (CNRS/MNHN, UMR 7209 AASPE, France)

The creation of a database, associated with GIS and including 700 settlements dated to the Vth-Ist centuries from all over the French territory raises the possibility of developing new fields of investigation at multiple scales.

One of these emerging lines of research concerns the rates of foundation and decline of sites, and the factors influencing their distribution in the landscape. The major aim of this approach lies in the analysis of the modes of land appropriation and land exploitation and their impact on the local environments and agricultural systems. The programme includes therefore systematic archaeozoological and archaeobotanical studies in order to highlight the associated agropastoral and forestry practices.

Several episodes of increasing anthropogenic pressure on natural resources have been recorded in this way. The study also reveals differences in the duration of the habitats at a regional scale, possibly linked to their ownership and status.

Finally, a rural exodus associated with the emergence of *oppida* settlements is presumed for the end of the latenian period.

### **A31.05: Late Iron Age Workplaces**

by **Doreen Moelders** (Staatliches Museum für Archäologie Chemnitz, Germany)

In the social sciences work and workplaces are an important topic for more than ten years. Corresponding research projects were developed in the context of failures in development, design and application of new technologies. Within this research Lucy Suchman coined the term “situated action” which was directed against the common assumption of human action being aimed at rational und planned goals.

Following the theoretical concept of situated action and referring to more current workplace studies I will deal with the planned presentation of the organization of work in late Iron Age workplaces, mainly on examples from the *oppidum* Bibracte – Mont Beuvray, France. The issues for discussion are embodied knowledge of the actors, everyday competence in dealing with labor and materials and the coordination of action sequences. Another subject of this paper will be how information like this can be obtained from the archaeological material.

### **A31.06: Development of modes of pottery production in Eastern Bohemia during the La Tène Period**

by **Richard Thér** (University of Hradec Králové, Czech Republic), **Tomáš Mangel** (University of Hradec Králové, Czech Republic)

The La Tène period is one of the most interesting contexts for the study of the relation between social processes and pottery technology. In this period the variability of pottery technology reaches its climax. There are two principal technological innovations in the period: potter's wheel and two chambered vertical kiln. Both these innovations are assumed to be the consequence of the development of craft specialization. We can distinguish two basic situations suitable for the emergence and spreading of the technological inventions: (a) Socially based demand for specific aesthetic and/or technological properties of pottery can generate impulses for adaptation of technological chain. It occurs especially in the situation when pottery becomes a part of political economy of elites. (b) Development of social complexity is accompanied by a high degree of craft specialization in which the craft production becomes principal economic activity for a part of population. The situation of crafting under economic pressure could unchain the evolution of (or open a willingness to accept) cost effective technological solutions. The systematic approach based on archaeometric analysis of pottery technology and provenance was used to test the models in the Chrudim region (Eastern Bohemia).

### **A31.07: Villa rustica as a significant element of economic transformation in Thrace and Moesia Inferior**

by **Viktor Chystyakova** (Charles University, Czech Republic)

This paper will be focused on economic and social development of rural settlement in provinces Thrace and Moesia Inferior under the roman rule. Villa rustica will be presented not just as a new architectural type, but mainly as a new economic unit, that could be identified as a repercussion of Romanization. When the new provinces were integrated into Roman Empire new economic and cultural elements appeared, villa rustica became an important part of rural society, that had to support agriculture and economic development of new lands. The paper will present transformation of the rural society through the presence of villa rustica, that became complex productive unit with wide spread of productive specialization in Thrace and Moesia Inferior. The occurrence of villas could be presented as provider of an advanced economic system: development of agricultural, the appearance of new production technology, mediator between rural and urban area (with emphasis on local specifics). The role of villa will be presented in a framework of gradual development of rural environment, in a context of Romanisation.

### **A31.08: Resource Base of the Early Mediaeval Fort at Pohansko**

by **Petr Dresler** (Masaryk University, Czech Republic)

The Early Medieval fort of Pohansko was one of the largest centres of its age in Central Europe. Almost sixty hectares were intensively inhabited and at least a half of this area was fortified. The prosperity of such central place needed to be secured by effective supply of raw resources – namely for the manufacture of tools, weapons, kitchenware, textiles, jewellery, etc. The raw materials crucial especially in the construction works were wood, clay and stone. The wood acquisition had to cover also the demand for heating and wood charcoal. Iron ore was vital for making tools and weapons. This contribution attempts to outline the necessary amount of these raw materials, their sources and transport costs. The model estimates are based on archaeological and environmental investigations carried out on the site and its surroundings during the last fifty years. However, little is known about the food supplying of the centre. Necessary foodstuff was probably produced by the inhabitants themselves or acquired from elsewhere through exchange. The acquisition mechanisms of these vital commodities in an environment where the economy was not based on monetary exchange have not been thoroughly addressed yet and hence they form an important issue of the Great Moravian Period.

### **A31.09: How to get rich and stay rich – Grain trading as a sustainable economy in Lower Bavaria**

by **Hans Geisler** (Archaeologist, Germany)

Along the Danube between Regensburg and Künzing, a fertile landscape with loess soils called „Gäuboden“ around Straubing as its center, is well known for its wealth of archaeological finds. As the region has no geological resources such as copper, iron ore, or salt, its wealth, as manifested e.g. in grave goods, must obviously be based on a long-term sustainable agricultural surplus production. The requirements for such a surplus are discussed, but we also have to look at the means to convert commodities into luxury goods, in a time-span from Neolithic to the Middle Ages.

### **A31.10: “Three Bags Full” – Large-scale state investments for promoting food-producing capacities in Late Roman Transdanubia (Hungary)**

by Judit Pásztokai-Szeőke (Hungary)

In the case of an extensive, multi-continental empire like the Roman, with its complex interdependencies and broad support networks, we can expect a very complex and sophisticated answer to the challenge of changing natural circumstances on cultural systems. Roman society was able to decrease the negative impact of the less advantageous natural circumstances and with the help of some large-scale officially-initiated acts, use them to the empire's favour.

The case in hand is Transdanubia during the 4<sup>th</sup> century AD. The expansion of the cultivated land (by drainage and forest-clearance) and the promotion of the food-producing capacities by large-scale state investment (the settlement of new workforce, importation of seed-grain, mass-supply of good-quality agricultural tools to the local rural population) was a very successful economic enterprise here, as testified by the need for new collection-storage-redistribution points some 30 years later to hold the abundant surplus in agricultural production from this region.

We can assume that in addition to the demands for more stocking facilities, this increasing surplus production in grain could have also an effect on the 4<sup>th</sup> century AD textile production of Pannonia due to the arising needs for more textile containers, like sacks for packing cereals.

### **A31.11: Social and economic relations in Early Middle Age view through the significance of dies from Budureasca Valley**

by Andrei Măgureanu (Institute of Archaeology, Romania), Bogdan Ciupercă (Prahova County Museum of History and Archaeology, Romania), Anton Alin (Prahova County Museum of History and Archaeology, Romania)

Budureasca Valley is a micro-zone situated in the region of the Carpathian hills, north part of Wallachia. On a rather small area 15 sites are dated back to the Migration Epoch and discoveries from those sites are the object of our attention. Base on their production capabilities, especially on moulds, we can have the picture of Budureasca Valley artisan's relations both with the eastern and western area. On one hand interests and relations with the circle of power represented by the populations, that Byzantine historians named “Sclavins”, on the other hand an attention towards another circle of power, that of the Avars in the Pannonia Plain, all under the influence of Byzantine Empire. Wallachia was, in the Migration Epoch, a crossroad of political and economical influences and our question is: can all those influences be tracked into the object production? We consider that we can distinguish particular influences coming from those mentioned power circles and how this shaped different aspects of north Danubian society, like the economy (especially in terms of technology) and fashion. We chose the moulds because those are the objects that have many opportunities for such discussion: presence of moulds involves the presence of goldsmiths and that supposes both technological influences and presence of a market for their products. Moulds can be a starting point to a discussion on long distance relations involving either social status, or economic power.

## **POSTERS**

### **A31.01-P-2: Funnel Shaped Reindeer Trapping Systems in the Mountains of Eastern Norway – Sámi or Norse origin?**

by Hilde Rigmor Amundsen (The Norwegian Institute of Cultural Heritage Research, Norway), Kristin Os (The Norwegian Institute of Cultural Heritage Research, Norway)

The cultural origin of funnel shaped reindeer trapping systems located in the mountains of Eastern Norway has rarely been discussed. Thus, geographically, the region includes the southern part of the historic Sámi settlement areas. The use of these systems is usually dated within the Iron Age and Medieval period. Reindeer hunting served as economic base, as is apparent from the use of the time and effort to build and maintain the trapping system, the hunt itself, the processing and finally the distribution. While those constructions are considered to be of Sámi origin in the northern part of Norway, this is more debatable in the southern part. The reason for diversity in opinion with regard to the origin of these traps could be the complex cultural history of the mountain areas in Eastern Norway, and lack of recognition of the Sámi presence in prehistory. Cultural differences between the Sámi and Norse are more apparent in the northern Norway. However, the similarities in these specific trapping systems in the different regions make it pertinent to investigate the origin of these traps in Eastern Norway.



### **A31.02-P-2: Textile Archaeology in the Roman Venetia: from manufactures to history**

by **Anna Rosa Tricomi** (University of Padua, Italy), **Maria Stella Busana** (University of Padua, Italy)

This paper is focused on archaeological artifacts related to textile production in the Roman North-Eastern Italy, part of the ancient Cisalpine Gaul, in order to shed new light on different aspects of the Roman textile industry in this region, from a technological, organizational and social point of view.

Despite the abundance of information provided by ancient literary and epigraphic sources about production and processing of wool in Cisalpine, what is still unknown is the archaeological aspect of this economic sector because very few publications address to textile tools and their function in archaeological context.

For this purpose a systematic census of artifacts related to textile craft has been completed, to classify archaeological remains and support the ancient authors' writings.

A further aim is to get information about technology and yarns or fabrics produced.

Based on GIS analysis, attempt to reconstruct the spatial distribution of this manufacturing is an additional goal. Through distributional and statistical analysis we could likely identify areas of higher concentration of artifacts and make hypothesis about where textile working took place, e.g. if it was a simple domestic activity or if it was carried out in special laboratories.

## Session A32

### Relative vs. Absolute Chronology of the Neolithic of the Carpathian Basin and South Eastern Europe

Saturday, 7 September 2013, 14:00–18:30

Room: UP 115 (Building 2, ground floor)

**Organisers:** **Wolfram Schier** (Institut für Prähistorische Archäologie der Freien Universität Berlin, Germany) and **Florin Draşovean** (Muzeul Banatului Timisoara, Romania)

Ever since Oscar Montelius developed the typological method, archeological cultures and the phases of their evolution have been distinguished and brought into a chronological order by means of an analysis of the characteristics and typological evolution of artifacts. However, the relative chronology thus established has certain limitations and inconsistencies, which have become far more obvious since the establishing and refinement of absolute chronology, especially by radiocarbon dating.

Research undertaken over the last decades has shown that the chronological sequencing of some Neolithic and Eneolithic cultures in the Carpathian Basin and South-East Europe is not consistent with the increasingly numerous and precise dates yielded by the C14 method. These differences stem from the fact that the existence of certain typological features of an artifact does not necessarily also imply a chronological difference, and some of the phases thus established may represent local or regional variants of the same cultural manifestation. A careful analysis of the cultural contents of certain phases, corroborated with the absolute dates available, is at present needed in order to better understand the Neolithic cultures of this geographical area.

The proposed round table aims to bring together specialists working in this field, who will engage in a discussion of what we have come to consider the “classical” chronological sequences, in close relation with the dates of absolute chronology, and, where it is the case, will operate the necessary changes in the chronological and cultural timeline of the 6th–4th millennium BC in the Carpathian Basin and South-East Europe.

#### A32.01: Pottery typology and the monochrome Neolithic phase in Macedonia

by **Darko Stojanovski** (University “Goce Delcev”, The former Yugoslav Republic of Macedonia), **Trajce Nacev** (University “Goce Delcev”, The former Yugoslav Republic of Macedonia), **Carlo Peretto** (Università degli studi di Ferrara, Italy)

The beginning of the Neolithic way of life in the Balkans is widely accepted as a multi-faceted and complicated process, imported, triggered or influenced from more than one external source. The debate on the “aceramic” (or pre-pottery) phase aside, in the last decade the existence of a purely “monochrome” phase has been questioned also. This paper joins the debate by presenting typological profile of the pottery assemblage of Grncharica – a Neolithic settlement in Macedonia. So far, no settlement from Republic of Macedonia has been attributed to a Monochrome Neolithic phase. <sup>14</sup>C dates from Neolithic sites in general are few and old. Compared with assemblages from neighbouring countries, the predominant monochrome pottery assemblage of Grncharica positions the site at the very beginning of the Early Neolithic, but the results from the two <sup>14</sup>C dating samples, taken from the only burial discovered in the settlement, are five or six centuries later than one would expect. There is an obvious conflict between relative and absolute dating, which calls for further studies and reconsideration of the chronological frame of the Balkan Neolithic, established half a century ago.

#### A32.02: Decorated pottery as a chronological marker in the early Neolithic of the Carpathian Basin

by **Michela Spataro** (Institute of Archaeology UCL, UK), **John Meadows** (Zentrum für Baltische und Skandinavische Archäologie Stiftung Schleswig-Holsteinische Landesmuseen Schloss Gottorf, Germany)

This paper considers the typo-chronological subdivisions of Starčevo-Criş pottery in Romania, Serbia and Slavonia, in the context of a wide-ranging study of Starčevo-Criş pottery production. Starčevo-Criş sites are remarkable for the diversity of pottery decoration within what appear to be short periods of occupation. Technologically, however, Starčevo-Criş pottery production is relatively uniform over most of the 6<sup>th</sup> millennium cal BC, which means that pottery technology, whilst indicative of the broad date range of Neolithic pottery, is not useful for refining the chronology of the early Neolithic. We compare the Starčevo-Criş typo-chronological sequence to calibrated radiocarbon dates, and show that the overall subdivisions may well be correct. Then, we compare the absolute dates available for different pottery styles, to see whether any patterns emerge – in particular, which styles can be regarded as reliable chronological indicators, and which are chronologically less sensitive, and which are not dated precisely enough to classify as good or bad chronological markers.

### **A32.03: Correlations and new observations regarding absolute and relative chronology of the Romanian neolithic based on Banat and Transylvanian researches**

by **Gheorghe-Corneliu Lazarovici** (Lucian Blaga University, Romania), **Cornelia-Magda Lazarovici** (Institute of Archaeology, Romania)

The correlation of the radiocarbon and stratigraphic data is very important for the understanding and explaining of ethno-cultural phenomena (migrations, diffusions, evolution, and involution). The problems are well known, data are already published, but there are still differences between interpretations and terminology used in different archaeological “schools”. In the paper we have analyzed terminologies such as Vinca-Tordos and dating referring to Gura Baciului, Gornea and Parta. In the paper we will present other archaeological situations that can explain some stratigraphic anomalies. Discussion of these problems related with relative and absolute chronology in a special workshop at EAA is important not only for archaeologists involved in the investigation of these civilizations but also for the ones involved in the study of other neighboring civilizations, avoiding misinterpretation.

### **A32.04: Timeline of the absolute and relative chronology in Southern Romania, 6th–4th millennium BC**

by **Radian-Romus Andreescu** (National History Museum of Romania, Romania), **Katia Moldoveanu** (National History Museum of Romania, Romania), **Pavel Mîrea** (Teleorman County Museum, Romania), **Cătălin Alexandru Lazăr** (National History Museum of Romania, Romania)

Establishing a real chronological frame for the evolution of both Neolithic and Eneolithic periods was one of the main goals of the archaeological researches undertaken in the last years in Southern Romania. Therefore, the researches undertaken on Teleorman Valley brought new important data regarding the evolution of Early and Middle Neolithic. The chronological frame established by these researches is different from the one set by the relative chronology according with, for example, the beginning of the Neolithic age in Walachia was set to the mid 6<sup>th</sup> mill. calBC. The existence of a core of the Neolithisation process in west Walachia from where the Neolithic spread towards east of southern Romania was demonstrated for the first time also using Radiocarbon dates. Another direction of research focused on the tell type settlements. Radiocarbon dates from Vitănești settlement, Teleorman County, lead to a better knowledge of the absolute chronology for Gumelnița culture in Western Walachia. The corroboration with the date from other tell settlements from Walachia lead to the refining of both relative and absolute chronology of Eneolithic Age. Therefore the researches from the last years lead, for the first time, to the outlining of a timeline regarding the absolute chronology for the whole Neolithic and Eneolithic period (6<sup>th</sup> – 4<sup>th</sup> mill. calBC) in Southern Romania.

### **A32.05: Late Neolithic in Carpathian Basin. A view from Transylvania**

by **Drașoș Diaconescu** (Brukenthal National Museum, Romania)

Considering the “archeological culture” concept as a technical term for the classification of archeological finds and for the establishment of a temporal order, my attempt is to present a new perspective about the Late Neolithic (ca. 5000–4500 calBC) in the Carpathian Basin.

Using correspondence analysis and based especially on the morphological features of the most abundant type of finds (pottery) my paper is focused on the reconsideration of the “archaeological cultures” and their relative inner chronology. Here, the already published content of settlement features and the inventory of graves belonging to Tisza, Lengyel, Vinča (C and D phases), Herpály, Csőszhalom-Oborin, Suplacu de Barcău, Pișcolt III, Iclod, Turdaș, Foeni cultures are analyzed through correspondence analysis.

The aim is to notice the relations between all these units and to see if the “classical” picture is still valid or not.

The <sup>14</sup>C data available for this temporal and cultural span are useful in order to check the viability of the proposed (based on the above mentioned method) chronological and cultural systems. Also, starting from the results of correspondence analysis and using a Bayesian approach for the relevant <sup>14</sup>C data, an absolute chronological frame is proposed for the Late Neolithic in the Carpathian Basin.

### **A32.06: Remarks on the Relative and Absolute Chronologies on the Neolithic and Eneolithic of the Eastern Carpathian Basin**

by **Florin Draşovean** (*Muzeul Banatului Timișoara, Romania*)

Numerous  $^{14}\text{C}$  data gathered from the Neolithic and Eneolithic sites of Transylvania and Banat during the last years bring to light some irregularities within the borders of relative chronology. Thus, phase IIC of the Banat Culture at the sites of Parța, Uivar and Sănanđrei shows differences as to its respective absolute dating. Radiocarbon chronology also reveals differences between the late phase of the Transylvanian Foeni group and the beginning of the Petresti culture, conventionally regarded as forming a direct transition. Also between the Petresti culture and the beginning of the Tiszapolgár culture differences in  $^{14}\text{C}$  dates do not correspond to the relative chronological system considering both cultures as (partly) contemporary. The paper will discuss these discrepancies between relative and absolute chronology at the transition from the Late Neolithic to the Early Eneolithic.

### **A32.07: Space time correlations of a Late Neolithic settlement complex, Polgár-Csőszhalom (North-Eastern Hungary)**

by **Raczky Pál** (*Eötvös Loránd University, Hungary*), **Anders Alexandra** (*Eötvös Loránd University, Hungary*)

In this lecture, we focus on different levels of space and time, and their interaction at the site of the Polgár-Csőszhalom. Our earlier archaeological investigations were concerned with the macro-structures of the Csőszhalom settlement namely the tell encircled by an enclosure system and the horizontal settlement, and we were able to reconstruct two different space-time reference systems that diverged regarding their basic characteristic features. The accuracy of classical radiocarbon dates did not permit a comparative and meaningful spatial-temporal examination of the smaller spatial elements that made up the already described macro-structures of the site. One goal of our current, long-term research project is a more detailed assessment based on the presently available 80 AMS dates in order to examine the internal dynamics of the interactions between houses, pits, wells and burials representing the different physical loci of human activities and events, as well as the spatial and functional associations of these loci and their spatial ranges.

### **A32.08: The Copper Age in Southeastern Europe – a historical epoch or a typo-chronological construct?**

by **Wolfram Schier** (*Freie Universität Berlin, Germany*)

Recent research on the Late Neolithic and Copper Age in South-Eastern Europe has shifted considerably the absolute dating of some cultures and sites, like the Varna cemetery, while it has left other cultures unchanged. Thus, increasingly discrepancies between absolute and relative chronology have turned up. At the same time, a methodological dichotomy is developing between the conventional comparative approach based on typo-chronological bounds and relations correlating neighboring cultures and an ordering of cultures based on their absolute dating. Divergent chronological terminologies in South-eastern Europe have caused additional obstacles to a broad scale view of the Copper Age.

Besides terminology the absolute synchronisation of socio-economic processes is a major prerequisite of developing hypotheses for interpretation and explanation. Contemporaneity will favour external prime movers as climate change, while regional asynchrony might suggest rather internal, society-based causes of cultural change. The obvious discrepancies caused by recent absolute dating challenge some basic assumptions about the Copper Age of South-eastern Europe. The paper will focus on some consequences of new absolute time scales and will question the notion of a South-eastern European Copper Age as historical phenomenon, as was suggested by scholars as Müller-Karpe and Lichardus.

### **A32.09: Neolithic or Eneolithic? Contradictions between calendar and cultural sequences in Slovenia and Croatia and the importance of stratified settlements**

by **Marko Sraka** (*Faculty of Arts, University of Ljubljana, Slovenia*)

Comparison between the long-standing relative chronological schemes or cultural sequences on the one and the increasingly precise calendar chronologies derived from  $^{14}\text{C}$  dates on the other hand shows obvious contradictions in the 2<sup>nd</sup> half of the 5<sup>th</sup> millennium calBC when the transition between the Neolithic (Lengyel and Sopot cultures) and the Eneolithic (Lasinja culture) occurred in Slovenia and Croatia.  $^{14}\text{C}$  dated sites that are attributed to sequential and temporally exclusive periods and/or cultures exhibit a considerable temporal overlap or even suggest an inversion of the expected sequence. Contradiction can be explained by the inconsistency of the typological classification, which abstracts the changes in material culture within arbitrary cultural sequences, but could also be related to statistical scatter of probability inherent in  $^{14}\text{C}$  chronologies and consequently aggregation of temporally distinct events that

produces overlaps. With case studies from Slovenia (Moverná vas) and Croatia (Sopot-Vinkovci tell settlement) I will stress the importance of vertically stratified sites that allow us, by means of Bayesian modeling, to constrain and precisely date pottery assemblages as well as to suggest the timing of major changes in the production of pottery. The potential sources of the contradictions between calendar and cultural sequences can thus be more thoroughly explored.

#### **A32.10: System reboots: impact of new analytical methods on the re-consideration of Copper Age chronology of the Great Hungarian Plain**

by **Zsuzsanna Siklósi** (Eötvös Loránd University, Hungary), **Márton Szilágyi** (Eötvös Loránd University, Hungary)

The available analytical methods always affected not only the prehistoric chronology, but the interpretation of material culture and the reconstruction of past societies. According to the conventional typo-chronological approach and then the conventional calibrated radiocarbon chronology, the successive sequence of Tiszapolgár and Bodrogkeresztúr cultures covered the Early and Middle Copper Age on the Great Hungarian Plain between 4500-3650 cal BC. New AMS dates and their evaluation by Bayesian analysis necessitate the re-consideration of the Early and Middle Copper Age. These dates suggest that the system of successive phases of Tiszapolgár and Bodrogkeresztúr cultures cannot be maintained anymore because these ceramic styles were partially contemporary. Several methodological problems are raised and it is necessary to re-consider the material cultures signed by Tiszapolgár and Bodrogkeresztúr ceramic styles both chronologically and in the respect of the meaning of the ceramic style. Besides new AMS data a uniform, statistics-based approach is needed to the evaluation of pottery.

New results of our microregional study, materials of new excavations and the latest AMS data provided us an opportunity to this re-interpretation on local, micro-regional and regional levels. Our contribution to the session discusses methodological problems and suggests a new interpretational framework.

#### **A32.11: Middle Copper Age (Lasinja & Retz-Gajary cultures) in northern Croatia – Development of chronology**

by **Lea Cataj** (Croatian Conservation Institute, Croatia)

Archaeological excavations in northern Croatia, which were primarily intensified by infrastructural works during the last decade, generated a considerable number of radiocarbon results. Analysis of archaeological material, supported by absolute radiocarbon dating, created a chronological overview of the Middle Copper Age, but also raised new questions about the sequence of cultures, their duration and the internal chronology of certain groups.

Considering new results, Lasinja Culture in Croatia can be absolutely dated between 4300 and 3800 cal BC. It was followed by the Retz-Gajary Culture, absolutely dated between 3900/3800 and 3500 cal BC. The relation between these two cultures is not entirely clear, nor is the attribution of certain sites to one or another culture.

The percentage of the published results of archaeological excavations in Croatia, along with absolute dates for the Middle Copper Age period, is still relatively small. Unified database of series of absolute radiocarbon dates obtained from samples collected from closed finds would clarify a large number of issues related to the chronology of this period.

This lecture will give a brief overview of the chronology of the Middle Copper Age cultures in northern Croatia. Focus will be given on the results of excavations conducted in the last decade. The results from northern Croatia will be compared with those from the neighbouring areas of Slovenia, Austria and south-western Hungary, thus giving a wider chronological framework.

#### **A32.12: Focused on the Baden period: Chronometry versus Relative Chronology of Cultural Development of Central Europe in 4th-3rd Millennium BC**

by **Jana Mellnerová Šuteková** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), **Peter Barta** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), **Petra Kmeťová** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), **Kristína Piatničková** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), **Peter Demján** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), **Katarína Hladíková** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic)

One of the significant topics of Central European (E)Neolithic research is cultural development in 4<sup>th</sup> Millennium cal BC, the time of Baden that brought considerable cultural innovations in general. Our current knowledge about this period has increased well over the past years, but our knowledge about detailed chronological position of involved cultural taxa become inconsistent. Where is the problem?

Authors focus on absolute and relative chronology of Baden culture using the  $^{14}\text{C}$  dates from archaeological contexts in the formation zone of Baden in middle Danube and Tisza regions. The work uses database of published  $^{14}\text{C}$  measurements created within the project "Archaeological Chronometry in Slovakia". The aim is to propose and use new methodology of chronometric research of Baden based on series of Bayesian models (OxCal Program) filled preferably with data with high standard of chronometric hygiene. Clearly formulated questions connected with definition of the Baden phenomenon and critical chronometric research is believed to address chronological problems of the discussed prehistoric development more efficiently.

This work was supported by the Slovak Research and Development Agency under the contract No. APVV-0598-10.

## POSTER

### **A32.01-P-4: IPCTE radiocarbon database – state of art**

by Cosmin Ioan Suci (*University Lucian Baga of Sibiu, Romania*)

IPCTE Radiocarbon database was developed for the Neolithic and Eneolithic of Romania and surrounding areas. The 1300 dates accumulated until now are covering almost all Neolithic and Eneolithic data from Romania. I have in plan to extend the database in future and to correlate with the objects from the original archaeological context as well as geographic modeling. In the database most dates are conventional ones, many of them having a larger degree of error – so we need more AMS samples and Bayesian analyses for Romanian sites. The dates usually are not evaluated in their archaeological context (in many cases samples are sent to be analyzed before the archaeological materials from the context has been processed) and are linked to the site context by the excavator, based only on initially declared cultural affiliations (some contexts are not even published). The poster will present preliminary statistics of  $^{14}\text{C}$  dates across cultures and sites, discussing the impact on their relative chronology. Because of limited space it will focus on only two examples from the Romanian Early Neolithic: one implying relative / absolute chronology / geographic modeling and the second one about dating of wooden objects from South Romania.

## Session A33

### Social archaeology of death in the Roman world: New data and perspectives

**Saturday, 7 September 2013, 08:30–13:00**

**Room:** UU 405 (Building 2, 4th floor)

**Organisers:** **Llorenç Alapont** (Colegio Oficial de Doctores y Licenciados de Valencia y Castellón, Spain), **Luigi Pedroni** (Colegio Oficial de Doctores y Licenciados de Valencia y Castellón, Spain) and **Gaël Brkojewitsch** (Pôle Archéologie Préventive de Metz Métropole, France)

“pallida mors aequo pulsat pede pauperum tabernas / regumque turres” (Hor. Od. 1.4.13)

As it is well known, death has always touched everyone, directly or indirectly, regardless of age, gender, social position and wealth. In particular, in the Roman world the moment of transition, culminating in the funeral and deposition of the body of the deceased, or more generally of his/her remains, assumed different aspects depending on various factors. The archaeological excavation is often the only process that permits us to recall the ancient ritual gestures associated with death. However, sometimes the human remains are the best source we have to derive information on the social life of the deceased.

This session aims to explore the various ways of interpreting the archaeological material sources, including human remains, in order to deepen our knowledge of how death impacted politically, socially, and religiously on ancient Roman society. Therefore, we will try to bring new examples in order to illustrate the methods of management of the dead body in Roman times, to highlight the material traces of the ancient approach to death, and, finally, more generally, to outline our perspectives on the interpretation of ancient human remains.

We invite fresh contributions and innovative interpretations on any aspect of death and deposition in the Roman world in the period between the fourth century BC and the fourth century AD.

#### **A33.01: Lux Mortis: A material study of Roman lamps in funerary practice in Gerulata**

by **Robert Frečer** (*Charles University in Prague, Czech Republic*)

The auxiliary camp of Gerulata (present-day Bratislava-Rusovce, Slovakia) was founded in the late Flavian period, and housed a cavalry *ala* for most of its existence. Its adjoining cemeteries contained Roman lamps as a major group of grave goods, in both cremation and inhumation graves until the early 3<sup>rd</sup> century AD, when lamps ceased to be deposited. Altogether 93 graves out of 336 contained a total of 106 lamps, a largely 2<sup>nd</sup> century assembly of both *Firma-* and *Bildlampen*. Lamps played a part in funeral rites, usually to be burned on the pyre; at Gerulata they were second only to pottery in abundance though they occur in varying proportion across different cemeteries and burial types. Their context in burial practice and relationship with other grave goods is analysed throughout; notably, inhumation graves otherwise lacking in funerary gifts have lamps associated with child burials. Despite comparison of relief stamps and decoration with other Noric-Pannonian material, the proportion of imports remains uncertain. The lamps bear signs of use, personal ownership, and several unique relief stamps and inscriptions. Roman lamps in Gerulata are seen as tokens of Roman culture, much used by the inhabitants of this borderland settlement in both life and death.

#### **A33.02: Roman Sarcophagi for Use and Reuse: Secondary Life of Sarcophagi at Aphrodisias in Caria**

by **Esen Ogus** (*Texas Tech University, USA*)

Stone sarcophagi were impressive means of deposition of the body in Roman Asia Minor. These sarcophagi, usually used to inhumate a family rather than a single individual, were sometimes accompanied by a funerary inscription that disclosed the identity of the deceased. This paper focuses on the group of c. 500 marble sarcophagi produced in the second and third centuries C.E. at the Roman site of Aphrodisias in Caria. A substantial number of funerary inscriptions, either carved on sarcophagi or on separate marble blocks, were also preserved at the site. Even though these inscriptions clearly condemn the practice of sarcophagus reuse with imprecations and fines, many sarcophagi were still reused for subsequent burials, or for an entirely different purpose, such as building blocks in various monuments. The paper gathers the archaeological and epigraphic evidence from the city and demonstrates the various reasons of sarcophagus reuse despite the bans. The aim is to shed light on the social implications of the practice: why did not the ancients obey the prohibitions, and what factors made reuse so attractive that they considered paying fines?

### **A33.03: A topography of death: the funeral landscape of the northern cemetery of Emona (Ljubljana, Slovenia)**

by ***Bernarda Zupanek*** (*Museum and Galleries of Ljubljana, Slovenia*)

Roman cemetery can be regarded as a vast ritual and processional landscape for display of status and wealth. With its the alignments of monuments, ritual and funerary elements, participation of large number of people in processions and their journeys between the monuments, a cemetery is a funeral landscape.

The northern cemetery of Roman Colonia Iulia Emona (1st–6th century AD) has been researched from late 19th century onwards. From this cemetery around an important northern road (leading towards Poetovio, Carnuntum and Danubian limes) over 3000 graves have so far been discovered. Although archaeological research has often been focused on graves and grave goods, we have some information about remains of cemetery infrastructure (grave plots, boundary ditch) and other features in the northern suburb of Emona (temple of Equorna, ceramic quarter), and areas with distinctive burial rite and/or period of use can be detected (cluster of Late Roman inhumations; use of and transformation of prehistoric barrows). In the presentation, I focus on the questions regarding the topography, use and ideological potential of this funeral landscape.

### **A33.04: The Necropolis of Porta Nola at Pompeii and the Tomb of M. Obellius Firmus**

by ***Luigi Pedroni*** (*Colegio de Licenciados y Doctorados de Valencia y Castellón, Spain*)

The project “Pompeii – Via di Nola” supported by the Colegio de Licenciados y Doctorados de Valencia y Castellón, which is associated to the *Curso practico in arqueologia funeraria a Pompeya*, active since 2010, focuses his attention on the small necropolis outside Porta Nola in Pompeii.

This paper deals with the results, still preliminary, of the study of that small necropolis where, almost side by side, powerful individuals and slaves were buried. In particular, the little remains recently found during a superficial cleaning of the inner area of Obellius Firmus’ tomb will be presented. Among them, the decorated bone fragments attributed to his luxurious funeral couch are especially intriguing. In fact, it has been possible to reconstruct some small portions of the decoration that seems hypothetically attributable to the workshop located in the Casa del Fabbro (Pompeii I, 10, 7).

### **A33.05: “Exotic” funerary practices in the central sector of the Saints Peter and Marcellin catacomb in Roma?**

by ***Hélène Réveillas*** (*INRAP, France*), ***Philippe Blanchard*** (*INRAP, France*), ***Sacha Kacki*** (*INRAP, France*), ***Dominique Castex*** (*CNRS, France*)

In 2005, works in the Saints Peter and Marcellin catacomb brought to light six rooms in which were buried several hundred subjects. Different field operations showed that those spaces worked during three centuries (between the I<sup>st</sup> and the III<sup>rd</sup> century AD), receiving several simultaneous deposits probably linked to an epidemic. Original funerary practices were used (corpses were covered with plaster and wrapped up in fabric) and physicochemical analyses showed the utilization of expensive material during the funerary ritual (Baltic amber, Yemen incense, North Africa sandarac). It probably can be related to an high social status for the deceased. Those funerary practices are very particular for Rome at the beginning of our era and can be found in a close form in North Africa or in the Middle East, in which could be originating the buried subjects.

### **A33.06: Funerary practices in the Phlegrean Fields cities during the Roman period (300 BC – AD 600)**

by ***Gaël Brkojewitsch*** (*Pôle Archéologie Préventive de Metz Métropole, France*)

The paper addresses funerary practices during the Roman period in the Phlegraean Fields, a volcanic region located West of Naples. Chronological boundaries are defined from the acquisition of the *civitas sine suffragio* by the city of Cumae in the third century before Christ, to the conquest of the city by the Goths in the sixth century of our era. Two areas of the Cumae necropolis are described and analyzed following a chronological outline. Tomb architecture and funerary practices are discussed. First the architecture with the evolution of the peri-urban landscape and monuments as well as the spatial organization of space. Practices are discussed by describing the funerals, the entombment, and commemorations. Archaeological discoveries are interpreted from available sources (texts, engravings, iconographic documents).



**A33.07: The early Christian necropolis of Son Peretó (Mallorca, Balearic Islands): Anthropological study and interpretation of burial practices**

by **Magdalena Sastre** (*Universitat de les Illes Balears, Spain*), **Llorenç Alapont** (*Colegio Oficial de Doctores y Licenciados en filosofía y letras y en ciencias de Valencia y Castellón, Spain*), **Miguel Ángel Cau** (*Universitat de Barcelona (ERAAUB), Spain*), **Mateu Riera** (*Affiliated Research of the Institut Català d'Arqueologia Clàssica, Spain*), **Magdalena Salas** (*Museu d'Història de Manacor, Spain*)

The site of Son Peretó (Mallorca, Balearic Islands) is an early Christian complex composed of a church and a baptistery. Attached to these religious buildings, towards the West and the South, a series of rooms for domestic and productive purposes developed mainly in the 7th century AD. Recent excavations in these rooms as well as in the baptistery have uncovered tombs belonging to a necropolis linked to the sacred buildings and preceding the construction of the habitation nucleus.

Physical anthropology, paleopathology as well as archaeology of death have provided important new data about the physical characteristics and the way of life of the early Christian community buried in Son Peretó. The results contribute also to the interpretation of burial practices and rituals in Late Antique Mallorca.

**A33.08: Archaeologic and Anthropologic study of the Skeletons inside the Casts from Pompeii (Necropoli di Porta Nola)**

by **Llorenç Alapont** (*Ilustre Colegio Oficial de Doctores y Licenciados de Valencia, Spain*)

we will present a report on the archaeological, anthropologic and paleopathologic investigation conducted also with modern technologies on the casts of fugitives discovered in 1975 near the necropolis outside Porta Nola, and still totally unknown. In particular, in the last campaign, besides the direct examination of the bones visible through the plaster, a survey with laser scanner and a X-Ray examination were conducted. These analysis give new light about how the people from Pompeii lived and died.

**A33.09: The question of mortality of the soldiers in Roman Dobrudja (1st–3rd centuries AD)**

by **Birlița Lucretiu** (*Alexandru Ioan Cuza University, Romania*), **Curca Roxana-Gabriela** (*Alexandru Ioan Cuza University, Romania*)

The authors propose a demographic inquiry into the mortality of the soldiers from the northern part of the Roman province of Moesia Inferior. They address various aspects of the soldiers' mortality using epigraphic sources. Thus, they analyse not only the ages of the deceased (by taking into account the rounded ages and attempting to explain this phenomenon), but also the ages at recruitment and the relationship between these demographic parameters. The causes of death, as well as the living conditions during military service will be addressed in this demographic study.

**A33.10: Busta in Illyricum in 2nd and 3rd century AD**

by **Tino Leleković** (*Croatian Academy of Sciences and Arts, Croatia*)

The paper will focus on the cinerary burial customs in the Illyricum, especially on the phenomenon of *bustum*. During the past decade several excavations were conducted in Croatia on the Roman cemeteries, producing a good basis for an overview of the development and change of burial rites in this part of Empire. Also, owing to these excavations, the historical and cultural contextualization of each of the defined types can be given. New perspective is open on the Roman custom of *busta*, which showed to be characteristic for the cemeteries along the Roman limes. The origin and interpretation of the *bustum* type of grave have not been explained. One theory has it that such graves originated in north Italy and that the legionaries spread them to the provinces, especially those of the Rhineland and the Danube/Balkan regions. On the other hand, it is possible to perceive of the *bustum* as a funerary feature imported to the West by the army and immigrants from the East. Others believe that *busta* originated among the native Balkan ethnic communities. On the basis of new finds from Croatia and Serbia, this paper will try to give a satisfactory explanation of this feature.

**A33.11: Roman Funerary Monuments in the Sanctuary and Thermae of the Municipium Edetanorum (Llíria, Valencia, España).**

by **Vicent Escrivà Torres** (*Museu d'Arqueologia de Llíria (MALL), Spain*), **Xavier Vidal Ferrus** (*M.I. Ajuntament de Llíria, Spain*), **Carmen Martínez Camps** (*M.I. Ajuntament de Llíria, Spain*)

This paper deals with recent archaeological investigation in the area of the so-called Sanctuary-Thermae of Llíria (municipium of Edeta, in Hispania Citerior). This area was object of a large urbanistic program in Flavian epoch attributable to the personality of M. Cornelius Nigrinus Curvatus Maternus.

This urban project occupied an area outside of the *pomerium* of the city, close to one of the main gates, where some funerary monuments have been found. Two of them, dating back to Julio-Claudian period, show traces of cremations inside, and preserve traces of frescoes.

Close to them, in front of the main entrance of the thermae, a building in shape of a small prostyle temple in antis, has been found. For its characteristics and location, this building could be interpreted as an heroon, dedicated to the worship of a hero or a deified individual. We cannot discard the idea that this architectural model was chosen for M. Nigrinus Cornelius' funerary monument.

**POSTER**

**A33.01-P-3: A comparison of two Roman rural necropoli discovered at different ends of Slovenia**

by **Tina Britovšek** (*Institute for the Protection of Cultural Heritage of Slovenia, Slovenia*), **Matjaž Novšak** (*Arhej d.o.o., Slovenia*)

Mačkovec near Novo mesto (southeastern Slovenia) is a complex multi-period archaeological site (Middle Bronze Age, Iron Age and the Roman period) that was discovered during archaeological research launched in 2006. One hundred and eleven Roman graves dating from the 1<sup>st</sup> to 3<sup>rd</sup> centuries AD were identified. Graves were either simple pits with or without ceramic urns, or stone tombs. The burial ground probably belonged to a Roman *vicus* or a rural *villa rustica*, which hasn't been discovered yet. The local tradition is reflected in the grave goods and in the setting of the Roman cemetery next to an Iron Age barrow.

The other site, Križišče, was discovered in 2002. An area measuring 5,600 m<sup>2</sup> was excavated within the framework of archaeological accompaniment to the construction of the highway. A Roman roads crossing was preserved under thick deposits, and along it a cemetery. The wall separated the cemetery from the grounds of the Roman *villa* at Školarice. Fifty excavated graves form the largest such archives in Northern Istria. The cemetery was organized into grave plots, from among which three were excavated in their entirety. The grave goods date to a continued system of burials ranging from the mid 1<sup>st</sup> to 4<sup>th</sup> centuries.

## Session A34

### Social dimension of burial mounds

Thursday, 5 September 2013, 08:30–13:00

Room: UP 104 (Building 2, ground floor)

**Organisers:** **Petr Křišťuf** (University of West Bohemia in Pilsen, Czech Republic), **Tereza Křišťufová** (University of West Bohemia in Pilsen, Czech Republic) and **Hrvoje Potrebica** (University of Zagreb, Croatia)

Burial mounds as artefacts of human culture represent a wide range of people's actions and intentions. Not only they emphasize the funerary event but also reflect the social relations between the living community and the ancestors. Throughout the Prehistory and Early Middle Ages burial mounds were created as well-defined monuments and played an important role in manifestation of both personal, as well as, collective identities. Their spatial structure, form and dimensions usually reflect variety of social relations including family bounds, social position and gender categories. Through research on burial mounds we may better understand the relationships between domestic and funerary components, as well as, cosmological significance of individual monuments and whole funerary areas.

The current studies in Central Europe suggest there are distinctive relations among the spatial position of individual monuments within cemeteries reflecting the social and familial ranking. The isolation and outstanding size of particular monuments may rather emphasize a special social status of the buried individual. The variability of burial monument dimensions may reflect the gender differences. The choice of internal burial construction and funerary ritual (inhumations/cremations) also represent a certain level of social differentiation, such as in Middle Bronze Age of Early Iron Age.

The session aims to discuss the social issues of Prehistoric and Early Medieval communities in the light of our current knowledge on creation and further development of burial mounds and other types of funerary monuments in Europe and beyond.

#### **A34.01: Family monuments: social dimension of burial mound cemeteries in the Bronze Age**

by **Petr Křišťuf** (University of West Bohemia in Pilsen, Czech Republic), **Tereza Křišťufová** (University of West Bohemia in Pilsen, Czech Republic), **Ondřej Švejcár** (University of West Bohemia in Pilsen, Czech Republic)

Throughout the Prehistory burial mounds were created as well defined monuments which played an important role in manifestation of both personal and collective identities. Their spatial structure, form and dimensions usually reflect variety of social relations including family bounds, social position and gender categories.

Prehistoric burial mound cemeteries are often structured in spatially separated groups. We test the hypothesis that these groups of Bronze Age graves in Bohemia represent cemeteries of individual families. We used GIS, statistical tests, principal component analysis and network analysis.

This study is based on the assumption that the family cemeteries consist of graves of individuals who had different social status. Graves belonging to one group should therefore have different formal properties. Comparing formal and spatial characteristics within the studied cemeteries, some groups of graves were identified; these consist of graves with different burial assemblages.

Our conclusion is that this finding supports the hypothesis that these groups of graves represent cemeteries belonging to different families. We proved that the barrow size is related to its cultural identity and to the amount of buried people (not to their social position). Demonstration of family's relationship was crucial for spatial distribution and size of barrows at Bronze Age cemeteries.

#### **A34.02: Social structure in Hallstatt burial mounds – how far can we go?**

by **Hrvoje Potrebica** (University of Zagreb, Faculty of Humanities and Social Sciences, Croatia)

This paper will concentrate on features of burial mounds which are usually related to ideas of social status and social role of the deceased. Based on several case studies from the Eastern Hallstatt Circle the author will try to show that these features are not simple reflections of the social structure of local communities and that such generalisations can be quite misleading. The level of relation of mound construction and grave inventories to social structure of the community which raised them, in large extent depends on spatial and temporal context of these monuments which is significantly different in different cultural groups of the Eastern Hallstatt area.

### **A34.03: Who owned the barrow landscape? The social platform of the barrow building assembly.**

by *Marianne Rasmussen* (*Danish Agency for Culture, Denmark*)

The construction of large-sized barrows represents a social event, where numerous people gather in the performance of a common task. It presents an obvious possibility of drawing upon, expanding and emphasising existing relations. A research project on the South Scandinavian Bronze Age barrows centred on the excavation of the large barrow Skelhøj (ca. 1400 BC) in Southern Jutland, Denmark has offered new insight into the well defined organisation of the barrow building process and the social network activated in connection with the burial. Skelhøj is part of an agglomeration of large, richly furnished contemporary barrows. During the fairly short period of barrow building, the landscape is intensively exploited for the purpose. The area of the barrow group holds an important position for a number of people that exceeds a few local households. How can such a barrow building community be characterized, and how does the assembly refer to social organisation in general?

The research project based on Skelhøj and the investigations on land use derived from the project is moving towards its conclusion. The paper will consider some of the results that may be viewed as an important contribution to the conception of South Scandinavian Early Bronze Age society.

### **A34.04: Exploring social differences in the Hallstatt world: Burial mounds and beyond**

by *Nils Müller-Scheessele* (*Römisch-Germanische Kommission, Germany*)

There can be little doubt that the Hallstatt burial mounds of Middle Europe were built in the context of an hierarchical society. The extent of this hierarchy, however, is still the topic of heated discussions. While, as common wisdom suggests, the dead do not bury themselves, the proposition that a burial *in some kind* reflect the social position of the individual buried within at least partially still holds. This applies in particular if large numbers of cases are included. Thus, for the present paper some 2000 burials of the Hallstatt period in Baden-Württemberg and Bavaria have been studied. Possible social differences are explored on different levels: On the level of grave-goods, of grave sizes, of burial mode and even of nutrition. These data reveal that for the Hallstatt people gender and age were obviously of primarily importance in taxing one's social position. However, I will argue that the individuals in the burial mounds represent only a part of the whole social community. For a more complete picture, also the individuals in less impressive graves and especially those which at first sight appear to have not been buried at all have to be included.

### **A34.05: Burial Mounds and Social Animals: The social implications of the deposition of animal remains and animal artifacts in Dolenjska Hallstatt tumuli**

by *Adrienne Frie* (*University of Wisconsin-Milwaukee, USA*)

Tumuli have been studied to determine what they reflect about the societies that built them, and those who are interred within them. Social factors demonstrated by burial mounds have been sought primarily in the grave goods interred with the deceased. However, often exotic or precious grave goods are the focus, and the deposition of animal remains and animal artifacts are underconsidered. I will discuss how the study of the deposition of animal remains in tumulus contexts, as well as animal artifacts that are associated with burials, may provide another productive avenue for interpreting the various facets of individual and group identity, social roles, and prehistoric beliefs. I draw on the preliminary analysis of the materials in three tumuli from the Dolenjska Hallstatt culture, tumulus III and tumulus V from Kapitelska njiva, and tumulus XII from Brezje, as a case study. These sites are juxtaposed to indicate the ways that the deposition of animal remains and animal artifacts may demonstrate some key social facets of burial mounds, specifically: the association of burial mounds with feasting and ritual activities, expressions of totemism, apotropaic beliefs about animals, and social roles and identities indicated by identification with different species.

### **A34.06: The megalithic past of the Bronze Age kurgans of the North Pontic Region**

by *Alexey Nikitin* (*Grand Valley State University, USA*), *Svetlana Ivanova* (*Institute of Archaeology, Ukrainian Academy of Science, Ukraine*)

The Early Bronze Age (EBA) burial mounds (kurgans) in the western part of the North Pontic Region (NPR) display a tendency to be erected over earlier megalithic ritual constructions. The initial purpose of these megalithic structures might have been cosmology-related. In succeeding time periods the initial astronomic purpose could have been forgotten and these megalithic sites became designated as sacred places suited for distinguished burials. Megalithic elements comprising the initial constructions became incorporated into the subsequent burials. The Revova kurgan from western NPR is one such construction. It was erected over a megalithic structure in a shape of a tortoise with the

stone elements of the construction being astronomically aligned. An assembly of disarticulated human remains deposited in the center of the construction dated to the Eneolithic (4200 BC). On the other hand, the layout of stones comprising the "Tortoise" appears to most accurately line up with the movement of celestial objects as they appeared on the sky around 6300 BC. Mitochondrial DNA lineage extracted from the remains was characteristic to the Mesolithic/Neolithic hunter-gatherer populations from northern Europe as well as Bronze Age groups from south Siberia.

#### **A34.07: Cultural unification of Tumulus Culture societies in the light of recent research on the Middle Bronze Age burial practices from the areas of south-western Bohemia and south-western Poland**

by ***Mateusz Cwaliński*** (*Adam Mickiewicz University in Poznań, Poland*)

Main purpose of presented paper is a comparative analysis of funeral rites characteristic for the two Middle Bronze Age cultural groupings located in Bohemia and Poland, belonging to Tumulus Culture. During aforementioned time span barrows were a widespread phenomenon on the vast areas of Europe. Different scholars have argued that their presence in such broad spatial range indicates existence of culturally unified societies. However, latest studies show that tumulus funeral rite was a subject to constant change in time, influenced by local cultural background, as well as, specific regional development of various Tumulus Culture groupings. The intention of author is to answer the question whether we can actually talk about a single social organization, recognizing similar rules in the sphere of ritual behavior? Relationships between analyzed groups were analyzed by a quantification of similarities and differences characterizing their burial practices. The main attention was focused on the construction of barrows, consisting of different stone and wood structures. Modifications in the sets of construction elements and burial arrangements were examined by statistical methods. Achieved results helped to determine the degree of unification of both groups at the level of funeral rite and revealed a number of information about the changes in social structure.

#### **A34.08: Multiple Dimensions in Iron Age Burials: The Dürrenberg Case**

by ***Holger Wendling*** (*Salzburg Museum, Austria*)

The burial landscape of the Dürrenberg (Austria) offers a unique dataset for research on burial practice, social relations and religious thought of an Iron Age community dating to c. 600–200 BC. Nearly 400 graves are dispersed across the alpine hilltop area, being concentrated in large groups of barrows, smaller cemeteries or as isolated single tumuli. Multiple burials in a single grave-chamber offer a singular opportunity to investigate social relations at a basic, familial scale, but also social arrangements on a communal and micro-regional level. Additionally, the combined occurrence of inhumation and cremation burials in a single grave reflects particular ideational and social differentiation. A comprehensive study on single burials, their combination in burial chambers, the spatial arrangement of mounds in cemeteries and the distribution of different burial zones will contribute to the understanding of the Dürrenberg as an ancestral landscape. Signs of social hierarchies within single graves and different cemeteries might correspond with economic inequality and social and religious identities. The spatial dimension of burial distribution might reflect distinct strategies of social discourse. The temporal dimension will eventually give the opportunity to trace social developments through time and supports a dynamic view on Iron Age social interaction and burial practice.

#### **A34.09: Social Dimension of Burial Mounds of Kalenderberg Group (Hallstatt Culture). A Case Study of Burial Mounds in Sopron-Burgstall Cemetery**

by ***Katarína Hladíková*** (*Faculty of Philosophy, Comenius University, Slovak Republic*), ***Petra Kmeťová*** (*Faculty of Philosophy, Comenius University, Slovak Republic*)

Early Iron Age barrows in Central Europe represented a wide-spread phenomenon of burial rite. However, burying in barrows in the area of Kalenderberg group was largely restricted only to certain groups of the population. Therefore, cemetery in Sopron-Burgstall (Várhely), NW Hungary, had a special place amongst the tumulus-cemeteries of Kalenderberg group, since it reminds of similar large tumulus-cemeteries located near uphill settlements of central character from SE Alpine Hallstatt region. It comprised at least of several dozens of barrows which were dated to the Early Iron Age and, as it seems, a wider social spectre of population was burying there. The aim of the paper is to test a hypothesis of correlation of barrow size and a social status of deceased from barrows in Sopron-Burgstall cemetery. Also an analysis of spatial distribution of these barrows, associated with the above analysis, will be performed. The results of these analyses will be compared to the situation in other burial grounds of Kalenderberg culture as well as in selected tumulus-cemeteries in other groups of East Alpine Hallstatt region.

#### **A34.10: Building tangible signs of power: Iron Age burial mounds at Botteghino – Parma Italy**

by **Paola A. E. Bianchi** (*Museo Archeologico Nazionale di Parma, Italy*), **Chiara Boggio** (*Museo Archeologico Nazionale di Parma, Italy*), **Daniela Locatelli** (*Soprintendenza Archeologica Emilia Romagna, Italy*)

The aim of this paper is to present the recent discoveries at Botteghino (PR- Italy): a Middle Iron Age cemetery with burial mounds. For the first time in western Emilia, it is actually possible to recognize a monumental funerary organization of landscape from late VI to V centuries BC, as shown in other contemporary extra regional ritual complexes. We try to present a discussion about the relationship between the Etruscan cemetery and the previous monumental organization of the area (unfortunately not clearly datable) when some remarkable circular and ellipsoidal structures are built as well, apparently not associated with burials. At the end of the 6<sup>th</sup> century BC the area, where were still visible the previous 'mound-shape' features, is rearranged, fenced and a gravel access road in SW / NE is set in the south-east area of the cemetery. The burial mounds are built with 'fences' and earthen and stone massing to create composite circular or elliptical 'tumuli' with structures in wood, earth and pebbles. There are about 15-16 graves containing remains of burials or possible burials. Concerning the architectural, depositional, anthropological organization of the Middle Iron Age cemetery, we consider the impact and meaning of its monumentality in western Emilia.

#### **A34.11: Death and social identity in the shadow of rulers – burial mounds and funerary rites in Early Medieval Gamla Uppsala (c. 400-1050)**

by **Robin Lucas** (*Upplandsmuseet, Sweden*), **Malin Lucas** (*Upplandsmuseet, Sweden*)

*Gamla Uppsala* (\**Old Uppsala*) is an exceptional Early Medieval centre of influence in Central Sweden. It encompasses official functions of law-making, cult and trade, as well as specialized crafts and residences for privileged groups. Also, in literary sources it emerges as an extraordinary religious centre. Starting from the 6<sup>th</sup> century AD, the erection of 70 metre burial mounds, massive house foundations, and rows of standing stones resulted in a large scale monumentalisation; a physical as well as symbolic manifestation of the site and its inhabitants. Previously excavated graves indicated the presence of aristocratic as well as a variety of other social groups, but the material has hitherto been too limited for an evaluation of the general social status of the population. Therefore, the 2012 excavations of 90+ cremation graves, dating from 400 – 1050, have added a new dimension to the complex social structure of the site. These damaged mounds contained well preserved remains of funerary pyres and exceptional artefacts, imported or locally produced. Through spatial analysis of the graves themselves and correspondence analysis of their contents, we aim to explore the kinship and social bonds underlying the rites performed by the funerary practitioners of this major centre.

### **POSTERS**

#### **A34.01-P-1: The rich get richer? Some new approaches to the subject of burial mounds of Čaka and Velatice culture.**

by **Martin Bača** (*Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic*)

Lavishly rich grave assemblages including the set of warrior equipment as well as monumental construction are among the characteristic traits of huge burial mounds of the Middle-Danubian Urnfields. When comparing to other, somewhat „poorer and less interesting“ graves from the same area and period, it is not by coincidence that they aroused rather wide recognition from the Slovak archaeological community. The traditional approach however didn't brought any new results for almost few decades and therefore one may ask if its potential isn't already wasted. The burial mounds of Čaka and Velatice culture yet still stands as a unique phenomenon of comparatively short period. They are a significant „manifesto“ of distinctive social class that had a need to showily express its status. On the background, specific rituals with maybe even socio-politic motives were in action. In the paper I will therefore try to outline their possible position in the geopolitical space of Middle – Danube area and suggest some rather new approaches to the subject not yet used in Slovak archaeology.

#### **A34.02-P-1: From the dead to the living: the study-case of Moita do Sebastião (Central Portugal)**

by **Olívia Figueiredo** (*Universidade do Algarve, Portugal*), **Nuno Bicho** (*Universidade do Algarve, Portugal*), **Cláudia Umbelino** (*Universidade de Coimbra, Portugal*)

Discovered during the last 150 years, the +300 skeletons recovered from the Muge shellmiddens are an essential reference for prehistoric archaeology, especially for the study of Mesolithic societies. Burials can reveal more than grave goods variations and chronology, exposing also indicators of social status and organization.

Based on new analyses and a review of published evidence, including skeleton position and orientation, spatial location, and presence/absence of votive materials, it is argued that the burial contexts found in Moita do Sebastião, one of the most important shellmiddens of the Muge archaeological complex, reveal a pattern that might result from an intra-site organization likely deriving from social hierarchy and division, representing complex hunter-gatherers, with fairly complex and differentiated burial practices. Data recovered from Moita do Sebastião seems to exhibit a higher complexity regarding the burials than previously thought, which seems to show the possible existence of small social groups.

#### **A34.03-P-1: Cremations from Iron Age cemetery Chagoda 1: preliminary results.**

by ***Ekaterina Kleshchenko*** (Institute of Archaeology of the Russian Academy of Sciences, Russian Federation), ***Alexandr Bashenkin*** (Vologda State Pedagogical University, Russian Federation), ***Marina Vasenina*** (House Children and Youth Creativity, Russian Federation)

In this paper we report the preliminary results of the study the cremation burial ground dated by Iron Age Chagoda-1. It is located on the West of Vologda Oblast (Russia). The site can be attributed to the Dyakovskaya archaeological culture, dating back to the 4–3rd cent. BC to 4–5<sup>th</sup> cent. AD. Cemetery Chagoda-1 has appears to be one of the largest burial grounds in the region. The goal of research is to define the specifics of human body cremation and its deposition for identifying various burial traditions on different stages. During the study cremated material we apply a synthesis of anthropological methods, forensic science techniques and data regarding the influence of fire and high temperatures on the bone. During the examination the number of bone fragments, colour, weight, and presence of deformation cracks were taken into account. Obtained data was correlated with age and sex of buried persons and presence or absence of animal bones. Provided study allows us to detect the variability in the funeral rite of Chagoda-1. Ground burials are represented by individual interments with the tradition of continuous burning at high temperatures and high percent of animal bones persistence. Burials in “houses of the dead” are collective burials with the tradition to cremate at low temperature fire.

#### **A34.04-P-1: Eneolithic burial mound cemetery in Dřevohostice (Central Moravia) and construction of late eneolithic barrows in Central Europe**

by ***Petr Křístuf*** (University of West Bohemia in Pilsen, Czech Republic), ***Jaroslav Peška*** (Archaeological Centre in Olomouc, Czech Republic), ***Ladislav Rytíř*** (Labrys o. p. s., Czech Republic), ***Michal Hejzman*** (Czech University of Life Sciences, Czech Republic)

This paper describes the results of archaeological research at the Eneolithic burial mound cemetery in Dřevohostice wood (Central Moravia). The main aim of the project is to understand the process of building and subsequent use of burial mounds and whole cemeteries at the end of Eneolithic. Main question is if the late eneolithic barrows were built as a single event for only one person, or whether it is gradually increased and expanded structure for collective burials of families or communities. Next task is to get know the space among barrows and to find out its use.

One barrow was excavated in order to solve these questions. Remains of inner construction were however not detected and also the additional burials were not discovered. A few fragments of bell beaker were discovered in filling of the excavation pit from 19<sup>th</sup> century. The same situation we can see at other sites of corded ware and bell beaker culture in Central Europe. It turned out that the barrow was built in one phase. Under the mound was well preserved the original soil surface horizon before construction of the barrow. The area beneath the barrow was probably not used as arable land.

#### **A34.05-P-1: Social practices in the necropolis of Setefilla (western Andalusia, Spain)**

by ***Michał Krueger*** (Adam Mickiewicz University, Poland)

The necropolis of Setefilla, located on the periphery of Tartessos in actual western Andalusia, constitutes a remarkable example of social relations between the living and the dead at the beginning of the first millennium BC. In this study I will analyze the role of social practices like cremation, fragmentation of bodies and pots, selective use of material culture in the process of creation and maintenance of local identities and social structure. By focusing on deliberate manipulation of material culture, it is possible to examine the web of meanings and interactions that connected the existing society with the buried members of the local community. The paper places special emphasis on the ways in which those relations were constructed.

#### **A34.06-P-1: Taken from the dead: The ancient robbers of East Lithuanian barrows**

by ***Laurynas Kurila*** (*Lithuanian Institute of History, Lithuania*)

The presentation examines the grave robbery that occurred within the Early Medieval East Lithuanian barrow culture during the period of its existence. The study is based on data from barrow inhumations dated to the 3rd/4th – 5th/6th centuries AD. The nature of the grave robbery, dating it, the aims of the robbers, their relationship with the communities that left the barrow cemeteries, and the historical background of the robberies is discussed. It is asserted that the barrow cemeteries in East Lithuania were systemically robbed no later than the second half of the 5th – first half of the 6th century, i.e. shortly after burial. The upper part of the body of a deceased was disturbed in most cases, which allows one to assume that the robbers were well familiar with the local burial customs. The main plunder sought by the robbers was non-ferrous metal ornaments, while finding iron items was not their objective. Increased grave robbery was a consequence of the repercussions of the upheaval that reached East Lithuania in the Migration Period, i.e. in the middle of the 1st millennium. It could have been carried out by both outside raiders and local inhabitants rocked by the unrest.



## Session A35

### Some Assembly Required: Assembling People, Objects, Discourses, and Landscapes in Archaeology

Thursday, 5 September 2013, 08:30–18:30

Room: EP 120 (Building 1, ground floor)

**Organisers:** James A. Johnson (University of Pittsburgh, USA), Kathryn J. Franklin (University of Chicago, USA), Emily Miller Bonney (California State University, Fullerton, USA) and Ladislav Šmejda (University of West Bohemia in Pilsen, Czech Republic)

The term ‘assemblage’ has had a long and varied history in archaeology. Referring to archaeological objects from botanical data to grave goods to settlements, the term has been used in pre-determined, a priori and a posteriori ways; with the final output – “the assemblage” – being both the subject and the outcome of critical thought and analysis. In this sense, assemblage is often presented as a totalizing fact to be encountered, a known and quantifiable entity that might only be “theorized” subsequent to discovery. We suggest that we turn the critical lens towards the process of ‘assembling’ rather than the end product of assemblage. In so doing we would move from static assemblages that have long acted as placeholders for past action and mobility, to an examination of those movements themselves, acts of assembling, and reconsideration of things susceptible of being assembled, to not simply objects but techniques—systems of practice—discourses, and landscapes.

In this session we would invite participants to ‘shake up’ such longstanding approaches to assemblage by thinking about the ways in which meaning was made in the past through the movement (and moving) of people, objects, techniques, and discourses. Further, we open the session to discussions of the ways in which meaning is actively constructed through assembling in processes of archaeological analysis. Potential topics include:

- Mobility and social production
- Fragmentation and re-assembly
- Collections/Museology
- Entanglement
- Community
- Body and identity

We seek session participants that will more critically examine, evaluate and engage in dialogues with the production of meaning through acts of assembling in the archaeological record. We see no need for defining specific time periods of interest for such a topic as acts of assembling and the production of meaning pervade the archaeological record, as well as contemporary archaeological thought and practice. As such, the session is open to prehistoric archaeologists to art historians to museum collection specialists.

#### **A35.01: Caravans and cosmopolitanisms: Assembling late medieval social imagination in the Armenian highlands**

by ***Kathryn Franklin*** (University of Chicago, USA)

This paper applies a critical idea of Assembling to the web of projects that constituted social life in late medieval Armenia. Following the move to problematize understandings of history as ruptured by an absolute break in spatio-temporal subjectivity between medieval and modern, this paper conceptualizes the cosmopolitanism of late medieval Armenia not in terms of incipience, but as an active and contingent practice of assembling. Starting from archaeological assemblages of architectural motifs, ceramic styles and forms, and historical discourses, the paper will explore how these represent worlds of practice—that is, arguments for intelligibility on the global scale. To move within and between such worlds entailed the negotiation of multiple overlapping material, spatial, and discursive cosmologies—requiring that late medieval actors as mobile subjects be active ‘assemblers’ as well. The pilgrims, merchants, missionaries and emissaries who traveled by caravan through late medieval Armenia and stayed in caravan halls encountered materialities which not only were legible at regional scales, but also were conversant with each other at the local level. Late medieval social practice entailed the assembly of ways of being-in-the-world that were cosmopolitan, not so much because they were simultaneously local-and-global, but because they put to use multiple arguments for universality.

### **A35.02: Assembling Awe: Making Monuments and Subjects in the Prehispanic Andean Highlands**

by [John Janusek](#) (*Vanderbilt University, USA*)

I critically examine traditional approaches to monumental production and meaning. I investigate urban monumentality in the highland south-central Andes as an ongoing process of production, and specifically, as recurring practices of material assembly. For archaeologists, monumentality most commonly serves to *represent* urbanism and ‘state-level’ society, and to condense either so many ‘man-hours of labor’ or the core structural principles of a society. Such shades of objectification resonate with predominant political-economy approaches to emergent complexity, which seek to understand abstractions such as ‘political organization’ by studying monuments as one of its favored material representations. I seek to transcend such idealist epistemologies by studying the ongoing material production of monuments and the shifting techniques of monumental assembly that generated ever-changing forms of urban centrality in the south-central Andes. I argue that the very materiality of stone architecture and monolithic construction- including the color, technical resilience, and physico-mythical origin of stone –was central to producing Tiwanaku materially and politically. Assembling lithic monuments, their stones drawn from multiple sources throughout a high-altitude landscape, formed critical moments in the political production of this highland city. Simultaneously, monumental assembly produced subjects prone to embody admired technical capacities and ritual attitudes.

### **A35.03: Dialogues of Disclosure: Gathering and disclosing the world in the British Mesolithic**

by [Hannah Cobb](#) (*University of Manchester, UK*)

In prehistoric hunter gatherer studies we are faced with a fundamental problem; we know that these were mobile people, who likely moved over large distances, but the material we excavate comes from static sites. How then can we build an understanding of such mobile lifeways from the material we have? In this paper I will examine how we might think about how places, people and things gathered the world to them, and how that world was extended back out again. I will consider how things, gestures and practices may have acted to disclose journeys, relationships, places and people, and vice versa. The case studies presented here will be centred around the Mesolithic in Britain, but the perspective that I will argue for has broader application for how we may consider the assembling of people, places and things throughout time.

### **A35.04: Assembling Archaeological Data for the Grand Narrative of the Silk Route Exchange and Interaction at the end of the first millennium BC in Southeastern Kazakhstan**

by [Claudia Chanq](#) (*Sweet Briar College, USA*), [Rebecca Beardmore](#) (*University College London, UK*)

In Derek Turner’s [Making Prehistory: Historical Science and the Scientific Realism Debate](#) (2009), he discusses why both the ‘tiny’ and ‘the past’ are unobservable and thus defy the logic of scientific realism. This paper discusses difficulties in bridging the gap between the tiny particulars derived from archaeological assemblages and the construction of a grand narrative of exchange and interaction along the silk route.

A dominant trope for Eurasian steppe archaeology is the importance of the silk route as a conduit for the movement of trade goods, personnel, and ideas.

In southeastern Kazakhstan, east-west exchange occurred at the edge of the Tian Shan Mountains. The data from Iron Age sites of the nomadic confederacies of Saka and Wusun of the Talgar region include a set of four assemblages: (1) faunal collections of wild and domesticated animals; (2) macro-botanical and (3) micro-botanical assemblages in the form of charred seeds and phytoliths (opal silicates) from wild and domesticated plants; and (4) broken pots. In seeking to construct a macro-scale narrative from sometimes microscopic collections, faunal and plant assemblages may be used to describe subsistence economies; ceramic assemblages usually describe craft and domestic household production, but may also be indicative of trade.

### **A35.05: Assembling Social Identities: Movement and Spatial Interaction in Late Iron Age and Early Roman Dorset, South-west England**

by [Lara Ghisleni](#) (*University of Wisconsin–Milwaukee, USA*)

Current perspectives envision space as both product and medium of human action. Moving through spatial arenas can be viewed as a process of “assembling” or articulating social meanings. The rhythms of everyday movement in the domestic setting coordinate the identities and roles of social actors. This research examines domestic space as a context for social negotiation at the Late Iron Age/Early Roman transition (AD 43) in Dorset, south-west England. The

analysis explores changes and continuities in spatial configurations and productive activities at 14 settlements in rural, urban, and hillfort contexts before and after the Roman arrival. Comparisons with mortuary and osteological studies from the same region provide valuable insights into gendered activities. This research suggests that gender, age, and status were shaped by the spatial and temporal processes of movement through newly articulated social contexts, including an increase in built space and spatial partitioning. Future research will focus on the multiscale coordination of landscape configurations, such as boundaries, enclosures, field systems, trackways, and road networks, in order to assess the implications of inter-site mobility and navigation through the built environment for social identity, economic roles, and negotiation of Roman occupation.

#### **A35.06: Circulatory Landscapes of the South-Central Andes**

by Scott Smith (*Franklin & Marshall College, USA*)

This paper explores the movement of water in contact period and pre-Columbian ideational landscapes of the Andes mountains of Peru and Bolivia. When the Spanish arrived in the Andes in the 16th century various observers recorded that mountain springs and rivers were powerful points of ancestral emergence and that community identity was tied to these important places. In some cases, these ideational landscapes were movable. For example, communities who were relocated by the Inka state were known to have brought with them cups of water from their ancestral springs to add to water sources in migratory locations. Drawing on ethnohistoric research and recent archaeological data from the Lake Titicaca basin, I discuss the ways in which these landscapes were both powerful sites of circulation and movement and were themselves mobile.

#### **A35.07: Entanglement of the landscapes**

by Liliana Janik (*University of Cambridge, UK*)

This presentation looks at the way landscape has been entangled in the processes behind identity formation, representation and fragmentation in the Upper Palaeolithic Russian Plain. This will be accomplished by conceptually recreating different landscapes and bringing them together in the process of entanglement. At first I examine animal and plant remains found in the archaeological record to reconstruct what landscape zones were exploited by prehistoric communities. Secondly I examine artistic expressions of those communities to see what visual representations were made of particular animal species that inhabited the particular landscape zones e.g. river valleys or steppe. The results of these analyses will allow me to establish the way prehistoric fisher-gatherer-hunters created the visual signification between the landscape zones and the beings populating them, including humans. Thirdly, I focus on the figurines/visual representations which underwent acts of fragmentation, by being intentionally broken and their parts being taken away from the site. The distinction between different body parts and to whom they belong is assessed to establish what was left behind on the site and what was taken out into the wider landscape of entanglement between the social, cultural and natural landscapes.

#### **A35.08: Assemblages all the way down: archaeology of assemblages**

by Dimitrij Mlekuz (*University of Ljubljana, Faculty of Arts, Slovenia*)

How assemblages come to be? What do they do? Paper tackles the concept of agency from the post-humanist perspective, based on a idea that agentic capacity is distributed (in assemblages) rather than situated in a hegemonic subject-object relationship. Paper focuses on movement as a prime generator of all these emergent wholes. It explores how a assemblages are being made from material "stuff", brought together by movement, being assembled and reassembled in changing configurations. But matter has its own morphogenetic capacities and does not need to be directed into generating form alone. The assemblages have their own agency. The effects, agency, of the assemblage are emergent properties. Thus assemblage is never a solid block but an open-ended collective, a "non totalizable sum". An assemblage does not only have a distinctive history of formation but also a finite life span. Assemblage is always already a becoming. The results, actions are distinct from the force of each materiality considered separately. The assemblages, since they lack organisation, can incorporate any number of disparate elements. Assemblage can contain assemblages within itself or enter into new assemblages.

### **A35.09: Re-assembly recommended: 3-D modeling as analytical device**

by ***Emily Miller Bonney*** (California State University Fullerton, USA)

This paper demonstrates that Google Sketchup can enhance understanding of prehistoric architecture. Using the Early Bronze Age cemetery of Lebena Yerokambos in south central Crete as an example I argue that reassembling the architectural phases of a site with a life of more than a millennium reveals valuable information not available from other methods. The traditional analytical tool, the two-dimensional floor plan, suggests that rooms gradually built to the east of the tholos were additions that extended the tomb without detracting from it. The thick walls of the tomb in the plan dominate visually, contrasting with the less substantial walls of the annexes, and on-site inspection of the fragmentary remains does not alter this impression. Google Sketchup allows one to recreate the discrete architectural phases in three dimensions on the actual terrain available through Google Earth and to move around the complex disclosing the views available to the Early Bronze Age visitors. This process reveals that the so-called additions actually subtracted from the original meaning of the tomb. The annexes constructed over the last 700 years of the tomb's history gradually eroded the visual centrality of the original tholos and facilitated the relocation of ritual activity outside the tomb itself.

### **A35.10: Pars pro toto or totum pro parte. The deposition of metal artefacts during the LBA in the Lower Danube region**

by ***Florica Matau*** (Alexandru Ioan Cuza University of Iași, Romania)

The *hoard* and *hoarding* process has had an intriguing and shifting history of possible interpretations in the Romanian archaeology. Beyond interest in the *hoarding* as a process of *assembling* the metal artefacts, a further objective of our study is to conjure up the systemic sphere of circulation and social production from the archaeological record. While circulation within the systemic situation is not directly relevant to our approach, it is important to try to conceptualize how it is linked to the formation process.

Another important aspect of our presentation would be the social production which suggests that the great majority of metal deposits would have been buried with some care, ceremony, and performance. If nothing else, there would surely be rites to ensure that the material was “protected”; this might involve incantations, which are archaeologically invisible, but it might also be important to understand certain ways of selecting (*pars pro toto*) or re-assembling (*totum pro parte*) the metal artefacts, thus perhaps explaining the frequent observations of neat arrangement in the ground or the “specific” locations.

### **A35.11: Rubbish disposal and ritual deposition: pit assemblages at the Early Bronze Age site of Vráble (Southwest Slovakia)**

by ***Mariya Ivanova*** (University of Heidelberg, Germany)

Caches of complete ceramic vessels deposited in pits, sometimes in combination with other artefacts, are a striking phenomenon that has not received a satisfactory explanation yet. Indeed, archaeologists have given very little consideration to these peculiar assemblages in comparison to other outstanding depositions, in particular to hoards of metalwork. Caches are formal, single-event, multiple depositions that provide an excellent opportunity to study past acts of selecting and assembling things, as opposed to deposition by everyday habitual practices. In this paper I explore three pit assemblages from the Early Bronze Age site near Vráble in Southwest Slovakia as an illustration for the material practices involved in the formation of archaeological assemblages. The study benefits from a recent shift of attention from functional explanations and reconstructions of the “meaning” of such unique assemblages towards understanding the performative aspects of deposition.

### **A35.12: The Life Assemblage: Rethinking pastoral activity and the production of meaning and value**

by ***Hannah Chazin*** (University of Chicago, USA)

The idea of assemblages has been integral zooarchaeological analysis for many years. However, this paper suggests that the integration of herds of domesticated animals into human societies creates the possibility of and the need for particular acts of assembling of people, animals, and landscapes in ways that produce meaning.

The mixing of species, sexes, and ages in herds; practices of sharing and/or loaning animals; the distribution of labor around the herds; and the coordination of movements of groups of animals and humans all suggest ways in which herds themselves represent processes or loci for acts of assembling. Similarly, the foods derived from animals also play

a role in acts of assembling involved in commensality. Feasts (as well as other less marked forms of consumption) are sites or moments of assembly – of people, food, and other materials.

This paper will explore how a focus on pastoralist production, consumption, and circulation as acts of assembling (that produce meaning) can productively address the simultaneously economic and political stakes of the organization of pastoralist life. To do so, it will draw on zooarchaeological analysis of faunal remains from Late Bronze Age sites in the South Caucasus.

### **A35.13: Entangled Aegean-type wares**

by [Andrea Vianello](#) (*independent researcher, UK*)

Ceramic assemblages are a staple of archaeological interpretations. It has been long known that ceramics can tell us much about the societies that produced them. In the case of exchanges, cross-cultural influences can be detected, but such interpretations have been left without a sound theoretical background due to the complexity of the processes. Entanglement theory enables us to look at assemblages interpreting them at separate stages in their making, useful in case of cross-cultural transitions. The result is an approach that focuses as much on the movement of objects and the act of assembling as on the static assemblage concluding the processes that led to its formation. The availability of good contexts is essential however for the theory to be applicable. Entanglement theory is a step in the right direction, and I shall discuss it briefly by applying it to the case of Mycenaean style wares in the central and western Mediterranean. The meaning of material culture that is the product of exchanges is found primarily in the acts of assembling those culturally unorthodox artefacts. People is however less likely to change culture, and perhaps some focus on the consumers may help where contexts are unclear.

### **A35.14: Assembling meaning through allegorical objects**

by [Sophie Moore](#) (*Newcastle University, UK*)

This paper aims to examine the production of meaning at medieval Byzantine grave sides through the actions of objects, the divine, people and places. I will argue that the production of meaning at grave sites is linked to the strong allegorical tradition present in medieval Byzantine literature which deals with the ‘other world’. Meaning in Byzantine mortuary contexts emerged through the production of assemblages which included the use of allegory as a means of understanding distinct from literal truth. The production of mortuary assemblages included allegorical understandings of the absence of grave goods, the unusual presence in some graves of bells, shoes, and broken things, as well as crucially, the emotions and non-literal understandings of the divine brought to the network by the mourners. It is by looking at the whole assemblage as a process which included emotion and allegory, rather than as a discrete collection of objects, that I hope to understand better the categories of living, dead and divine in a Byzantine context.

### **A35.15: From “household practice” to “house as practice”: assembling humans and objects in the creation of Chachapoya residences**

by [Anna Guengerich](#) (*University of Chicago, USA*)

Theories of practice have been embraced enthusiastically in household archaeology, yet the practice of creating houses has been studied surprisingly little. Scholars of several disciplines instead locate the social significance of residential architecture in its roles as “structuring structure,” as a product of tradition, as an art object, or as a medium of communication. In contrast, this paper explores residential architecture as an active, material practice with social and political dimensions. Using the exceptionally preserved Chachapoya site of Monte Viudo from prehistoric Peru, I interpret the process of house creation as a set of intersecting decisions and actions that assembled community members and nonhuman objects alike. Creating these elaborate stone structures entailed the procurement and crafting of multiple kinds of natural resources, and required the effort of more individuals than household members themselves. As in the contemporary Andes, house construction was not merely a functional process, but a dense social event. Chachapoya houses were not fixed, coherent wholes whose meaning may be located wholly in their final form; rather, the act of assembly—of their material constituents and of the human individuals who came together to build them—is as important to their study as it was to their inhabitants.

### **A35.16: Assemblages and Synthesis**

by **Chris Fowler** (*Newcastle University, UK*)

This paper will address the relationship between assemblages and acts of archaeological synthesis. It will explore assemblages from a 'relational realist' perspective in which assemblages arise from sequences of relationships, and are transformed when the relationships configuring them change – including through the activities of archaeological research. From this perspective, all phenomena are assemblages, existing as material configurations. My recent research has been focussed on examining Chalcolithic and Early Bronze Age mortuary deposits in North East England as a kind of assemblage composed of and intersecting with other assemblages (e.g. specific burials, artefacts, typologies, radiocarbon dates, circumstances of site discovery and excavation, theoretical approaches to identity). In this paper I will reflect on how archaeological assemblages are extended and transformed through archaeological research, arguing that interpretations are reconfigurations of the assemblage. I will explore some methodological and theoretical implications of this position, particularly for the production of regional syntheses in archaeology.

### **A35.17: Assembling the Ironsmith in Irish Prehistory**

by **Kevin Garstki** (*University of Wisconsin-Milwaukee, USA*)

As iron technology arose alongside and in many contexts replaced bronze, the conception of what it meant to be a smith was rooted in the performance and social action involved in the production of iron objects. This development in Ireland was a slow process, embodied by the itinerant smith who travelled across the landscape from community to community. What it meant to be a smith necessitated periodic innovation and maintenance of expectations of competency, as systems of practice implicated in the technology were rooted in perceived novelty. In addition, conception of the smith drew on mediations between tradition and the future. While performative traditions were referenced during iron production, imagined futures were also circulating: when will the smith be able to next make an object, how long can the object be used? The assembling of the smith was concomitantly produced through the imaginations of his audience, those consuming the products, and though the choices of the smith himself. This paper will discuss the introduction of iron to Ireland in the 8<sup>th</sup>-7<sup>th</sup> centuries BC, and the subsequent development of the technology in the following generations, in order to highlight the assembling of the smith as a social actor.

### **A35.18: Migration Period Pendants: A Case Study of the Process of Assembling, Disassembling, and Reassembling in the Archaeological Record**

by **Nancy L. Wicker** (*University of Mississippi, USA*)

An examination of Scandinavian Migration Period jewelry known as gold bracteates allows us to trace at various scales the ways in which artifacts may have been assembled (construction of individual pieces), disassembled (dispersal of similar objects), and reassembled (collection with other objects). Bracteates are small golden discs that were stamped with dies to construct multiples that were embellished with suspension loops and decorative attachments. The discs, loops, and ornamentation could be assembled from diverse stocks of gold of varying quality. After bracteates were produced, sets of multiples pressed from the same stamp were dispersed, locally or over great distances far beyond Scandinavia. Mechanisms of this distribution may include mobile goldsmiths, gift-giving by elite travelers, and exogamic marriages. Particularly in so-called "central places," single bracteates were brought together (assembled) with other bracteates, pendants, and beads to form necklaces that were displayed by high-status women. These assembled groupings of ornaments were then deposited both in graves and in hoards. Thus the life-history of bracteates reflects the production of assemblages of closely related objects, then a fragmentation of these groups of objects as they were dispersed, and ultimately the gathering of individual pieces into the sets of objects that archaeologists study.

### **A35.19: Reassembling the King: Memory, History, and the Tomb of Gustav Vasa**

by **Joseph Gonzalez** (*California State University, Fullerton, USA*)

In 1551 King Gustav Vasa's second wife, Margareta Leijonhufvud, failed to recover from childbirth and died. The queen's passing seems to have impacted the king quite deeply and suddenly funerals and grave monuments were matters of considerable concern. After some apparent debate, Uppsala Cathedral was selected as his final resting place and a suitable monument was commissioned from the foremost artist in Sweden. But when the king died in 1560 the monument was as yet unfinished. When a monument was erected it was of radically different character from the monument that had been envisioned by the king. Subsequent remodeling of the chapel in which the tomb is located, together with shifting views of the king and the institution of the monarchy, have served to radically re-contextualize

both the king and his tomb. I will argue that the consequence of this process is that both the king and his tomb have undergone a radical reassignment of significance that is at odds with the intent of Gustav Vasa and the perspective of his contemporaries, and that each change to the king's tomb has resulted in a reassembling of the king that effectively reinterprets and reforms his memory and meaning.

### **A35.20: Unwrapping the Grave: Burial “Assemblages” as Acts of Assembling and Disassembling**

by Matthew Murray (University of Mississippi, USA)

A grave is often considered a discrete analytical unit that is preserved in space and time. However, the burial feature and associated objects that we excavate are the end result of a sequence of intentions and actions of living communities that extended beyond the spatial and temporal boundaries of the grave. This sequence included the assembling of human remains, objects, and practices. One important practice that has received increasing attention is the wrapping of mortuary objects as well as the body. The enshrouding of objects was performed in elite tombs of the early Iron Age, such as Hochdorf in southwestern Germany, as well as in more humble graves, such as those that Bettina Arnold and I uncovered in two burial mounds near the Heuneburg. The wrapping of mortuary objects conveys a profound transformation of the objects' meaning in the process of mortuary assembling; the masking of an object may even be understood as a symbolic form of disassembling or perhaps even *dissembling*. In this paper, I reexamine burial “assemblages” of the early Iron Age in southern Germany to suggest ways that we can “unwrap” elements of the mortuary sequence and explore processes of transformation in person, object, and meaning.

### **A35.21: Assembling Animals: Literal, Figural, and Imagined**

by Adrienne Frie (University of Wisconsin-Milwaukee, USA)

It may be possible to illuminate the dynamic construction of human-animal relationships and how they were meaningfully constituted in multiple temporalities through an attention to the how conceptions of the animal world were referenced in mortuary rituals. I discuss the remains of animals and animal artifacts at the Iron Age tumulus cemetery of Magdalenska gora in Slovenia, to make the case that these conceptual and physical interactions with animals both living and materialized indicate the process of assembling pasts and futures through mortuary practices and performances. This site was a potent area for negotiations between ideas about, attitudes towards, and interactions between humans, animals, and materials. The deposition of animal remains, as well as representations of animals on portable artifacts and on situla art indicate multiple conceptions of animals that led to their consistent inclusion in potent mortuary ritual. An examination of these materials may help illuminate how conceptions of animals were active in the performance of mortuary ritual at Magdalenska gora, as part of the confrontation of the past in meaningfully constructing the present and imagining potential futures.

### **A35.22: Guns, Knives and Knuckle Dusters – The Hidden Violence of a Industrial Working Class Suburb**

by Juhani Gradistanac (University of Turku, Finland)

The subject of the session is an examination of modern era weapons caches from old working class suburb of Raunistula in Turku, Finland. The weapons originate mostly from the aftermath of the Finnish Civil War in 1918, but also from criminal activity in the district. These weapons had to be kept secret and were buried or hid inside building structures, to be found by later inhabitants usually during renovation or rebuilding.

The cached weapons are examined from an ethnoarchaeological perspective correlating them with local folklore and popular images of their context area, as well as part of a larger pattern of political activity and social progress in the area. Also examined is the discovery and collection of the objects by current inhabitants interested in the history of Raunistula and their remembrance of the past of this fascinating environment.

### **A35.23: Fortune Favors the Bold? (Dis)Assembling Community, Gender and Contingency in European Iron Age Colonial Encounters**

by James Johnson (University of Pittsburgh, USA)

Colonial encounters in the European Iron Age have been presented in the archaeological literature as totalizing facts, with actants subject to pre-determined roles and finalistic outcomes within domination/resistance scenarios. Such conceptualizations have left little room for broader senses of possibility and opportunity, of more active, agentive, and knowledgeable engagements with risk by communities. Furthermore, archaeological studies of Iron Age colonial

encounters have often portrayed actants in the colonial context as atemporal, or at the very least limited in their treatment of the possibilities of human social action and conceptions of time and contingency. In this paper, I explore how the colonial encounters of the Greek colonies along the Black Sea littoral and the mobile pastoralists more commonly known as the Scythians in Iron Age Ukraine became the backdrop and points of genesis for acts of assembling and disassembling. I suggest different configurations of gender, power relations, and community were enacted and assembled alongside new, pervasive temporalities that highlighted engagements with the past, present *and* futurities. Colonial encounters are presented as fields of open-ended possibilities generating and/or contributing to multiple outcomes regarding human social action and the inherent risks involved in such gambles.

## POSTERS

### **A35.01-P-2: Social practice and communication reconstructed from grave assemblages? A case study from Corded Ware culture in eastern part of the Czech Republic**

by **Jan Kolář** (*Masaryk University, Czech Republic*)

The deliberate process of assembling artefacts took obviously place already in prehistory and best examples are graves. Here just few of finds could not be considered as intentional grave goods and as part of prehistoric mortuary practices a grave assemblage was most probably (?) created to represent the constructed identity/-ies of the dead and/or the mourning groups which needs to restore the social order disrupted by the death of their member. However, the exact prehistoric symbolic meaning or social roles of these assemblages are lost or changed in fragmentary material remains. On example of Final Neolithic Corded Ware culture from eastern part of Czech Republic, I would like to present and discuss the practices connected to and influencing the burial activities. As the archaeological evidence from this period is limited nearly exclusively to selective grave assemblages with highly symbolic and ritual meaning, we need to debate critically how the (archaeologically nearly invisible) common daily non-funerary practices within communities and inter-regional communication patterns are in these embodied.

### **A35.02-P-2: Assembling people, techniques and artifacts in order to identify the environment exploiting means: hard animal materials industry from the Eneolithic tell of Vitănești (Teleorman County, Romania)**

by **Monica Mărgărit** (*Valahia University of Targoviste, Romania*), **Radian Romus Andreescu** (*National History Museum of Romania, Romania*), **Pavel Mirea** (*Teleorman County Museum, Romania*), **Katia Moldoveanu** (*National History Museum of Romania, Romania*), **Ion Torciță** (*Teleorman County Museum, Romania*), **Adrian Bălășescu** (*National History Museum of Romania, Romania*)

In this paper we will try to provide an integrated image on the ways the Eneolithic communities from the *tell* of Vitănești (Gumelnita culture, phase B1) exploited the animal environment to obtain artifacts and on the way these objects are reintegrated in the cycle, this time as means to exploit the environment. For example, the significant quantity of *Cervus elaphus* antlers, in different stages of processing, from finished objects, to consumed debitage waste, determined us to try the reconstruction of the managing modalities of this raw material and prove the important weight that the hunting had in this community given the fact that in other contemporary settlements prevails the acquisition of the supports for the osseous industry deriving from the domestic species. Another observation which should be underlined is the presence of identical pieces from the typological perspective, in different processing stages, a fact that illustrates the preoccupation for a permanent stock, thus the production exceeded the momentary needs and allowed the prevention of any possible resources crisis.

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## Session A36

### Something out of the ordinary? Interpreting the diversity in the uniformity of the Early Neolithic Linearbandkeramik in Central and Western Europe

Thursday, 5 September 2013, 08:30–16:00

Room: EP 206 (Building 1, 1st floor)

**Organisers:** Luc Amkreutz (National Museum of Antiquities, The Netherlands), Ivo van Wijk (Archol BV, The Netherlands) and Fabian Haack (Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Germany)

Research into the Early Neolithic Linearbandkeramik (LBK, 5500–4900 cal BC) has over the past two decades presented us with a wealth of new information regarding the settlement and social structure of the earliest farmers in large parts of Central and Western Europe. Apart from traditional excavation archaeology, both isotope and aDNA research recently added a distinct perspective regarding life histories and mobility of humans and animals. This has brought us closer to the dynamics of early Neolithic life in this area and moreover demonstrates the presence of distinct spatio-temporal variation in its regional cultural characteristics. The longstanding formal uniformity of the LBK is gradually yielding and reveals an underlying diversity that is becoming increasingly data-rich.

The development of these new dimensions in our understanding is anchored in archaeological research ranging from burial customs and deposition practices, to social issues of settlement structure, raw material networks, violence, and mobility. These present the basis for creating a more heterogeneous picture of Early Neolithic groups contrasting with the well-known image of uniform loess-based sedentary farmers with linear ware. In this session papers are invited to discuss LBK diversity in relation to four broad themes:

- Regional and local inter- and intra-site patterning highlighting particularities in site location choice and settlement structure
- Expressions of regional style and choice in pottery fabrication and decoration, food economy and raw material (networks)
- Mortuary and deposition practices that offer a perspective on the manifold choices regarding ritual expressions
- LBK-life dynamics, isotopic, aDNA and associated research highlighting diversity in (community) life histories

Contributors are requested to present their research into the aforementioned topics, but also to specifically reflect on how their results relate to our common knowledge of the LBK and to what extent the diversity documented rather befits a difference of degree or of kind.

#### A36.01: In between LBK worlds: The Mosel area through the Luxemburg case study

by Anne Hauzeur (National Center of Archaeological Research, Luxembourg)

The Middle Mosel area appears as a link between two parts of the Northwestern LBK. This can be seen through the material cultural aspects, mainly illustrated by some features in the lithic assemblages and the ceramic decoration style. With the case study of the LBK settlements in the Great-Duchy of Luxembourg it is possible to underline differences which provide the diversity inside the north-western group of the LBK, and to investigate what can be seen as economic constraints, weight of the tradition, or real identity features. For this it is required to extract the elements of divergence from the common background, such as scrapers, arrowheads, splintered pieces or certain ceramic secondary decor components, and comparing them to the main characteristics. This translates not a real specificity but a strong filiation to the Rhine-Main area. Original assemblages will be included and with the known data, the Middle Mosel area appears as a geographical limit of South-East influence, discernable but loose enough to allow exchanges of goods or ideas with the neighbouring regions, including the Rhine-Maas area.

#### A36.02: House, Household and Village in the LBK in Little Poland

by Lech Czerniak (University of Gdansk, Poland)

The LBK settlement system is most commonly interpreted by using the *Hofplatzmodell*. In this model, settlements are interpreted as a collection of loosely scattered, solitary farmsteads, each inhabited by a small family group. If we, however, accept that the average period of use for a house was around 100 years, and that the group of people living in one house numbered several dozen, this would diametrically alter our picture of the built environment. Solving this quandary is thus of fundamental significance from the perspective of possible interpretations of social organisation in

the LBK. This paper presents a discussion of the problem outlined above. The author believes that it is essential to turn to theoretical discussions on the issue of the household, based on cultural anthropology and archaeology of the Neolithic in the Near East. The impetus to address this issue was provided by the results of wide-scale excavations at new LBK sites near Cracow. A detailed analysis of the layout of houses and traces of their repair and modification, as well as a study of the relationships between the houses, offers new grounds for discussing an alternative model of spatial organisation in LBK villages, and for discussing social organisation.

**A36.03: Storage pits, graves and cult features within longhouses. New aspects of LBK house characteristics (in Little Poland).**

by *Adriana Badtke* (*University of Gdansk, Poland*)

LBK longhouse interiors are usually described as a space where only pits for securing the structural posts of the house were located. Extensive excavations carried out over the past 10 years at LBK settlements in Little Poland have revealed numerous examples of houses concealing the remains of pits of various functions. These discoveries could provide a significant contribution to the discussion on the reconstruction of LBK longhouses, in particular regarding the ways in which their interiors were used.

This paper examines the interpretation of the functions of features based on an analysis of the shape of their cuts, the depositional processes recorded in their fills and their anthropogenic content. The results suggest that pits beneath the floors of LBK longhouses were used for storage, but, above all, may have been associated with a cult (graves, offertory pits?).

**A36.04: What the large LBK longhouse means and what happened after LBK boom in Central Europe?**

by *Jaromír Beneš* (*University of South Bohemia, Czech Republic*), *Václav Vondrovský* (*University of South Bohemia, Czech Republic*)

The Neolithic longhouse represents one of the most expressive phenomena in the period of the beginning of agriculture in Central Europe. The longhouse itself can be understood as an obligatory and strict sign of the new agricultural identity, which is rooted in societies in the Near East and Balkan, despite the fact that LBK population itself is biologically rather domestic. This newly constituted society was based on a new ideology, in which a “right-angle” system of house construction developed and then penetrated into Central Europe in the 6<sup>th</sup> millennium BC, as one of the typical elements of the economic and social system. The paper deals with the meaning of the longhouse itself, in particular with its origin and function in the Neolithic society. Special attention is paid to extreme longhouses, occasionally present in particular sites. The authors carefully estimate the function of such large structures, the change of their shape in the final stage of the LBK and they offer some possibilities of their explanation in social and environmental systems, connected with the Neolithic society.

**A36.05: This land is your land, this land is my land. Is there uniformity in the Dutch Bandkeramik settlement patterning?**

by *Ivo van Wijk* (*Archeological Research Leiden (ARCHOL), The Netherlands*)

The landscape in the southern part of the Netherlands is mainly structured in loess covered terraces formed by the Meuse during the Pleistocene. The clustered and non-linear settlement pattern of the Early Neolithic Bandkeramik on these terraces differs substantially from what we know from the adjacent Bandkeramik settlement clusters.

Research in this region, the Graetheide cluster, has long been characterized by excavations of Elsloo, Geleen and Sittard. Apart from these well known settlements, more sites on both sides of the river Meuse have been excavated over the past century. They show, that in this differentiated landscape other locations than originally presumed have been selected, tested and used for settlement. This observation leads to different kinds of questions: How could they cultivate locations on the Lower or High Meuse Terrace, without the need for digging deep wells or fear of floods? What are their motivations for exploring new locations? Does a different site location also imply that they abandoned their traditional approach to settlement patterning and structure? Chronology of these sites is therefore a key factor.

This paper will argue that diversity in settlements is noticeable for Bandkeramik people adapting to the local environment, implying a profound knowledge of the landscape.

### **A36.06: Linking Lithics. Interpreting flint raw material diversity in the Dutch Linearbandkeramik (LBK)**

by **Marjorie de Groot** (retired, Germany)

Within the framework of the research project “An Odyssey along the river Meuse. New perspectives on old Dutch LBK research (1925-2001)”, the flint assemblages of ten partly excavated Bandkeramik sites could be studied.

Whereas ‘Rijckholt type’ flints from extraction points in residual loams at Banholt and Mheer predominated in the previously studied settlements at Elsloo-Koolweg and Geleen-Janskamperveld, an unexpected diversity of – local and regional – flint types was worked at the settlements currently investigated.

Arguably, it would be too simplistic to explain this diversity in terms of exhaustion of existing resources. Soon after the initial settlement of the region, a long-distance network distributing considerable amounts of Rijckholt/Banholt flints eastward was established.

Although seemingly flint tools as such were not endowed with special values, their recurrent circulation may have contributed to maintaining kinship and ancestral relations, and thus to the reproduction of identity.

The diversification of raw material preferences occurred during a time of increase in the number and the size of settlements. This expansion may well have been connected with disruptions in social cohesion. Thus, the changes may reflect a process of exclusion from traditional connections, of the establishment of new affiliations and the need to express social identity in new ways.

### **A36.07: Flint, obsidian and radiolarite: distribution of the stone raw materials in early farming societies of Lesser Poland**

by **Jarosław Wilczyński** (Institute of Systematics and Evolution of Animals, Polish Academy of Sciences, Poland)

Recent rescue excavations carried out on the planned route of the A-4 motorway linking Kraków and Tarnów, provided very rich and diverse Neolithic stone inventories. Based on this material and on previous research, it was possible to show variation in the structure of raw material used by the LBK and Malice culture communities in Lesser Poland.

In the early LBK settlement phase only Kraków Jurassic flint was exploited, which in individual cases was accompanied by single radiolarite artefacts. At the middle LBK settlement phase, we can observe a significant increase of the number of artefacts. They are made mainly from Kraków Jurassic flint, and are also accompanied by imported obsidian artefacts, which could be seen as an indicator of far-reaching trade.

The structure of the flint distribution, which developed in the middle phase of the LBK, is still present at the Malice culture site. But artefacts made from other raw materials, imported from a larger distance such as obsidian and chocolate flint, become more and more significant. What is interesting, is, that these inventories were not compensated by local erratic flint, outcrops of which are located near the sites.

### **A36.08: Regional and social diversity of earliest LBK in southwestern Germany**

by **Hans-Christoph Strien** (Johannes Gutenberg-Universität, Germany)

At first glance, the earliest LBK is very homogenous. A closer look shows differences, however, in pottery, long-range relations and agricultural practices between regions and even at an intra-site level between family groups. These differences testify to local pre-LBK traditions as well as to the networks of immigrants from the northwestern Carpathian basin. This can be demonstrated in detail for southwestern Germany where the density of excavated sites is relatively high.

### **A36.09: Your mother smelled of elderberries: the changing role of ‘hunter-gatherer’ ceramics in an LBK context**

by **Daniela Hofmann** (Universität Hamburg, Germany)

In spite of increasingly sophisticated models of the Mesolithic-Neolithic transition, these entities tend to be invested with immutable characteristics. For instance, the presence of ‘diversity’ in various aspects of LBK life (economy, architecture, burial, material culture) is often interpreted as indicating the involvement of flexible and adaptable hunter-gatherers (as against conservative farmers), rather than the result of interactions which blurred such distinctions to create something entirely new. Similarly, items of material culture seemingly retain their association as tokens of ‘Mesolithic’ or ‘Neolithic’ identity over centuries. This paper takes as its starting point the contrasting fate of ‘hunter-gatherer ceramics’, such as Limburg and La Hoguette, on either side of the Rhine: quick disappearance in the east, long

persistence and diversification in the west. It is argued that the different trajectories of these pottery styles are not solely down to varying numbers of acculturated 'Mesoliths' on the ground. Instead, contact transformed the social roles that ceramics could play. This means that such pottery had a history of its own, and is more than a simple indicator of 'resistance' to LBK norms. The question of the ethnicity of its makers is no longer the only relevant one to ask.

#### **A36.10: Tracing new lines of development: a technological study of the Linearbandkeramik and Blicquy/Villeneuve-Saint-Germain ceramic assemblages from Hesbaye (Belgium)**

by **Barbara van Doosselaere** (University of Namur-FUNDP/University of Paris 1-UMR 8215, Belgium), **Louise Gomart** (Loránd Eötvös University – ELTE, Hungary), **Laurence Burnez-Lanotte** (University of Namur-FUNDP/University of Paris 1-UMR 8215, Belgium)

The uniformity – diversity of the Linearbandkeramik (LBK) pottery is now widely acknowledged. The fact that, besides common stylistic denominators, a high spatio-temporal variability affects ornamental, morphological as well as some technological characteristics, has been indeed repeatedly emphasised. Yet, this variability still remains enigmatic. A growing body of evidence, inferred from several pioneering technological analyses of ceramic assemblages from north-eastern France and Belgium, suggests that pottery production and consumption may root in far more complex networks of intra- and inter-regional interactions than initially expected.

In this paper, we will contribute to this debate by discussing processes of ceramic change and stability throughout the LBK and subsequent transitional periods in Hesbaye from a technological point of view. We herein present preliminary results of an ongoing research grounded on a high-resolution technological analysis of the LBK and Blicquy/Villeneuve-Saint-Germain (BQ/VSG) ceramic assemblages from the site of Vaux-et-Borset, with a particular focus on fashioning techniques.

Such a detailed reconstruction of potters technical know-how, by illustrating the existence of specific pottery producing traditions, proved to be an efficient way to readdress the continuity – discontinuity of the LBK and of the distinct but related BQ/VSG culture in Hesbaye.

#### **A36.11: A matter of degree: investigating LBK diversity through isotopic analysis**

by **Penny Bickle** (University of Bristol, UK)

Bioarchaeological studies of human and animal mobility, and diet are providing increasingly detailed insights not only into subsistence practice in the past, but also into the diversity of the foodways and lifeways found in prehistoric communities. One of the main challenges presented by investigating this diversity in the context of the LBK (c. 5500–4900 cal BC) lies in determining the scale at which variation mattered across this vast area. Did regional groupings create hierarchies of identities, formed at the individual, community and regional level? Or were broader networks active in facilitating shared practices and communication across weakly defined regions? Did variation in daily subsistence practice feed into other experiences of difference, e.g. in funerary rites and the symbolic repertoire? This paper will discuss these questions by drawing on the insights provided by isotopic analysis, focusing on the different scales at which diversity can be identified: individual lifeways, community and regions. The results from a large isotopic study of the LBK (PI: Professor Alasdair Whittle, Bickle and Whittle 2013) and a multi-disciplinary project investigating the spread of cattle-based agriculture in Neolithic Europe, including the study of lipids (The Milking revolution in temperate Neolithic Europe, PI: Professor Richard Evershed) will be drawn on.

#### **A36.12: Burial architecture at the end of the western Bandkeramik (Paris basin): innovation or a common pattern?**

by **Corinne Thevenet** (UMR 8215-Trajectoires, France)

Recent research in the Paris basin has provided a whole new insight into LBK burial practices in this region. A previously unsuspected complexity has been revealed, notably in grave architecture. For many years the interpretation had been that the deceased was placed in a simple, oval-shaped pit dug just large enough for the flexed body and that the pit was then immediately backfilled. However, new evidence from the Paris basin shows that this simplicity is only apparent. The graves in fact reveal a more complex structure: In their northern part the actual grave pit (niche) containing the body, was created beneath an overhang formed by undisturbed natural sediment. In the southern part, the pit includes a step (banquette) which is just below the opening to the grave. An empty space is thus maintained around the body. This new burial model (pits with niches) raises numerous questions. To what extent are these grave pits representative of LBK burial practices? Are they an innovation of the Paris basin or can we find evidence for them in LBK graves in other regions? Is there variability in the burial architecture in LBK societies and if so, what does it reflect?

### **A36.13: Ritual-burial complex of LBK in Niezvisko on the Dniester, the western Ukraine**

by **Maciej Debiec** (*Pracownia Archeologiczna "Obsydian", Poland*)

The research presents a unique ritual-burial complex of LBK culture, which was registered at the site Niezvisko, in the basin of the Dniester River, in Ukraine.

The location of the site close to the river bank meant that due to its accumulating activity all the finds and structures were preserved *in situ* at the primary level.

The complex, which was discovered there, was previously interpreted as a remain of a long house, and the burial associated with it.

I would like to present a new interpretation of the finds coming from Niezvisko.

The ritual-burial complex in Niezvisko consisted of a very richly furnished burial and a construction located in its vicinity, closely associated with the burial.

Within the construction several zones have been differentiated, which provided the place for various practices of the funeral rite.

In addition, it was possible to register the evidence of complete separation with regard to plant and animal food as for its preparation, consumption and remains deposition.

The entire structure with the grave has been interpreted as a ritual-burial complex of LBK, which reveals unknown until now practices accompanying LBK funeral rites and the early Neolithic stratification within the community.

### **A36.14: Diversity in ritual practices at the end of the Linear Pottery Culture (Linienbandkeramik)**

by **Andrea Zeeb-Lanz** (*Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Germany*), **Fabian Haack** (*Generaldirektion Kulturelles Erbe Rheinland-Pfalz, Germany*)

In the late phases of the Linear Pottery Culture (LBK) a number of sites with probably ritually motivated activities can be documented. The spectrum ranges from pottery depositions in wells to supposable sacrifices and dramatical manipulations of human bodies deposited in caves or enclosures. This paper introduces various sites with evidence of probable rituals that show the abundance of ceremonies executed in the final stage of the LBK. This diversity in ritual practices which for the LBK can only be observed at the end of their cultural development leads to the question whether these ritual activities are linked to the rather abrupt end of the LBK in the western part of its distribution in Europe. Although an answer to this question is difficult to give, the paper attempts to offer some hypotheses.

## Session A37

### Studies on settlement archaeology in the eastern area of distribution of the Bandkeramik

Friday, 6 September 2013, 08:30–13:00

Room: UU 405 (Building 2, 4th floor)

**Organisers:** **Andrzej Pelisiak** (University of Rzeszów, Poland) and **Thomas Saile** (University of Regensburg, Germany)

The first Neolithic communities in Central Europe are reflected archaeologically by the Bandkeramik (LBK). It has been demonstrated that there are significant similarities as well as distinct regional differences within the LBK complex, which stretches from Paris to Kiev and from Szczecin to Budapest. The proposed session will be dedicated to the eastern area of distribution (e. g. Gniechowice, Zofipole, Notenkopf, Żeliezowce etc.). We would like to discuss questions referring to chronology, spatial patterns and intra-site organization. Other important subjects for debate will focus on the beginning and disappearance of the LBK in the eastern area of distribution and the role of LBK communities in the genesis of the Trypolie culture. We would also like to call attention to the question of contacts both within the LBK complex and between LBK settlers and their outside world. One of the main aims of the session will be to report on recent developments in research on the eastern area of LBK distribution.

#### A37.01: Magnetometer surveys on early Neolithic sites throughout the eastern area of the Bandkeramik

by **Martin Posselt** (Universität Regensburg, Germany), **Wojciech Blajer** (Uniwersytet Jagielloński, Poland), **Maciej Debiec** (Uniwersytet Rzeszowski, Poland), **Andrzej Pelisiak** (Uniwersytet Rzeszowski, Poland), **Taras Tkachuk** (National Preserve of Monuments "Ancient Galych", Ukraine)

Inspired by several non-destructive surveys (Magnetometer survey) on early Neolithic sites throughout southern Lower Saxony, Germany (e.g. Diemarden) having yielded convincing results with respect to detailed settlement structures from 2002 on several field campaigns in southeastern Poland and western Ukraine with an analogous aim have been taken through. One of the main goals of this research inspired by Thomas Saile (University of Regensburg) is to produce conclusions about the settlement development of the early Neolithic of Europe in its eastern areas on large scale by the identification of unequivocal structures, e. g. groundplans of Bandkeramik houses. The paper presents a preliminary report about the magnetometer-surveys. While magnetograms from sites in Poland in several cases show quite detailed settlement structures of the Bandkeramik in Ukraine several typical conditions prevented the detection of respective archaeological features by now. Nevertheless, experiences picked up so far allow conclusions about potential and future strategies of magnetometry in the research of Europe's early Neolithic in its eastern distribution.

#### A37.02: Linear Pottery Culture site Bilshivtsy II. Connection with Central

by **Taras Tkachuk** (National Park "Ancient Halych", Ukraine)

Neolithisation of the Upper Dniester River banks is connected with arrival at this territory of the population of the Linear Pottery Culture. More than ten sites of this culture are known here. Bilshivtsy II has been studied most thoroughly. It is situated on the left bank of the Hnula Lypa River, which is the left tributary of the Dniester River. One pit house and three pits have been excavated. Long surface buildings have not been discovered. The found pottery belongs to the late (note) phase of the Linear Pottery Culture. One of the pit contained also fragments of two vessels with incised ornament in the form of closely situated horizontal and vertical zigzags. Such kind of ornamentation is characteristic of the pottery of the Central European Tiszadob Neolithic group. Apart from pottery, little chips of obsidian and basalt (?) chisel have been found. The nearest obsidian deposits are situated in the territory of Slovakia.

Radiocarbon dating of Bilshivtsy II coincides with the dating of the Tiszadob group – the last quarter of the VI century B.C.

#### A37.03: The easternmost Early-LBK settlements

by **Thomas Saile** (Univ. Regensburg, Germany), **Maciej Debiec** (Univ. Rzeszow, Poland)

Up to now the most easterly known Early-Bandkeramik settlement was a site on the southern edge of the city of Rivne in western Ukraine. Recently, two further sites belonging to the beginning of the Bandkeramik culture have been discovered in Volhynia (Mežirič, Josipivka). This moves the limit of the known distribution of the Early Bandkeramik still further eastwards.

The later Bandkeramik has now been documented in the better known parts of Volhynia as a dense network of settlements following the minor valleys. Similarly, there is a considerable extension of the area of the Bandkeramik towards the East as far as the Dnieper River and southeastwards along the Dniester River.

#### **A37.04: New linearbandkeramik culture settlement in the Odessa region (Ukraine)**

by **Dmytro Kiosak** (*I.I. Mechnikov Odessa National University, Ukraine*)

The paper treats newly discovered settlement Kamyane-Zavallia of the Linearbandkeramik culture in the Southern Bug valley, in the region where they were previously unknown. The site has relatively well preserved cultural layer. Kamyane-Zavallia is the first Linearbandkeramik culture settlement found in the Southern Bug river valley directly in the geographical range of the local Neolithic Bug-Dniester culture. The closest site of the latter is Zavallia investigated by V.M. Danilenko on the opposite bank of the Southern Bug in the clear line of sight from the discussed settlement. Thus, the further investigation of the Kamyane-Zavallia site can shed new light on the chronological position and hypothetical interaction of both cultural aspects.

#### **A37.05: LBK Settlement and Social Structures in Eastern Central Europe, 5500 to 4500 BC**

by **Martin Furholt** (*Christian-Albrechts-Universität zu Kiel, Germany*), **Carsten Mischka** (*Christian-Albrechts-Universität zu Kiel, Germany*), **Knut Rassmann** (*Deutsches Archäologisches Institut, Germany*), **Gabor Serlegi** (*Magyar Tudományos Akademia, Hungary*)

In the last few years several LBK settlement plans have been surveyed by large scale geomagnetic investigations in eastern Central Europe. They give new insights into settlement structures in this region during the early Neolithic. Especially, we want to focus on sites in Slovakia and Hungary. The high-resolution geomagnetic data enable us to reconstruct the population sizes, social organisation and its spatial patterns. To this end, we will evaluate the data in the light of supra-regional trends in the 6<sup>th</sup> and 5<sup>th</sup> millennium BC in central, western and south-eastern Europe. Our aim is to investigate the variability in settlement size, layout and building densities and their social implications within the LBK and between the LBK and contemporary settlements in western, south-eastern and central Europe.

#### **A37.06: Essential Features of the Settlements and Dwellings of LBK Communities in East Carpathian region**

by **Madalin-Cornel Valeanu** (*The National Museum Complex "Moldova" Iași, Romania*), **Nicolae Ursulescu** (*Al.I.Cuza University, Romania*)

In the later *Notenkopf* stage, the LBK communities came in east Carpathian region. Here, these communities have reached an extremely rapid expansion, which made the settlements to be on short term – aspect reflected in housing characteristics.

Mapping LBK settlements with the support of military maps was the method who had determined a series of characteristics of human habitat regarding at the mode of interaction with space and geographical environment, constituting models of analysis in comparison with the earlier or later civilizations.

Although archaeological investigation was made in a small number of LBK settlements of this area, however these revealed some important characteristics. The dwellings were built rudimentary and were small in size, being documented pit houses (fully deepened) and huts (surface or / and partially deepened).

Recent attempts to suppose for east Carpathian region (between the Carpathian Mountains and Pruth river) the existence of similar dwellings like in Central Europe (long house with multiple rooms) are in fact only the hypotheses. The authors consider that the dates generated by the archaeological investigations in this region cannot assert interpretations of this type.

#### **A37.07: Figural representations from the eastern border of the LBK**

by **Valeska Becker** (*Westfälische Wilhelms-Universität Münster, Germany*), **Maciej Dębiec** (*Pracownia Archeologiczna "Obsydian", Poland*)

The LBK is probably one of the best researched archaeological cultures in all of Europe. Various studies concerning settlement structures, artefact categories or mortuary rites have been published, and also figural representations have been the centre of attention in some publications. Still, little is known about figural finds from the far east of the LBK. Therefore, our paper aims to fill that gap. We will give an overview of the figural representations from Poland, Ukraine,

Moldova and Romania, which comprise anthropo- and zoomorphic figurines and incised and applied representations which are sometimes elaborately decorated. In our presentation, we will link these finds to figural representations further west, outlining similarities and differences and defining contacts between east and west.

**A37.08: Obsidian – economically important or valuable prestigious gadget. Exchange network within the linear pottery complex and the distribution of obsidian artifacts.**

by Andrzej Pelisiak (*University of Rzeszow, Poland*)

Long-distance exchange is associated with exotic objects and raw material which have different prestige values than on the area close to their origin. Within the Linear Pottery culture (LBK) obsidian is easily recognizable and probably the best documented material. Obsidian artifacts are frequently registered on the LBK sites in Poland and Ukraine. Number of artifacts made of this raw material found on the LBK settlement-sites varied from several to several hundred objects (20% or more of chipped assemblage). The aim of this paper is twofold. On the base of the distribution of obsidian artifacts some aspects of exchange network will be discussed e.g. can we reconstruct the contacts routes. On the other hand but closely related to above are the economical and social aspects of obsidian artifacts themselves in context of another exchanged goods. The important questions are: Why did the obsidian artifacts travelled so far throughout central Europe?, and where the obsidian was economically important raw material but where artifacts made of obsidian could be valuable prestigious gadgets?

**A37.09: Technology of Early Neolithic vessels in southeastern Poland – local and imported pottery**

by Agnieszka Czekał-Zastwaj (*Polish Academy of Science, Poland*), Anna Rauba-Bukowska (*independent researcher, Poland*)

The authors of the paper since 2011 realize the NCN grant (N N109 181 040), entitled: Technology and chronology of the oldest pottery in the upper Vistula River basin (VI/V millennium BC). Technological analyzes are carried out on series of pottery samples, in order to examine the relationship between morphology and technology of their production, the primary function of the various forms and noticing of chronological and territorial differences. Mineralogical-petrographic and physico-chemical analysis aimed at reconstructing of the manufacturing process of ceramics, such as sourcing and selection of materials, preparation and composition of the pottery mass, methods of making and firing, as well as to determine their physical properties and purpose. All analyzes are carried out successively. In that paper will be presented some preliminary results relating to the comparison of pottery technology of the Linear Pottery Culture in the upper Vistula basin with pottery imported from the area of the Eastern Linear circle. Furthermore contacts between LBK settlements in the Kraków region are interesting issue. This kind of connection has been observed on the basis of the identification of clay used in the vessels production.



## Session A38

### Taking on the transition: new perspectives on continuity and change between the Late Bronze Age and Iron Age in Europe

Friday, 6 September 2013, 08:30–13:00

Room: EU 104 (Building 1, ground floor)

**Organisers:** Katharina Becker (Bradford University, UK), Ian Armit (Bradford University, UK) and Phil Mason (Institute for the Protection of Cultural Heritage of Slovenia, Slovenia)

The transition between the Late Bronze Age and the Iron Age is one of the major turning points in European prehistory. In many regions, the cultural 'golden age' represented by the Late Bronze Age is followed by apparent discontinuity in the settlement and mortuary record, or by a phase of relatively modest archaeological expression, which seems to stand in stark contrast to the fact that one of the most fundamental technological innovations – iron working – signifies its beginning. This apparent lull has often been linked with the apparent climatic change around the same time. Also, while strong notions about social and cultural identities in the later part of the period dominate archaeological debate, discussion of this issue in the earlier part of the Iron Age is relatively rare. Over the last couple of years, refinement of typo-chronological sequences of sites and artefacts in several parts of Europe, as well as new archaeological data and methods, provide opportunity to re-assess and rethink the crucial issue of technological, stylistic and cultural change and its mechanisms, as well as the role of environmental and demographic change around the end of the Bronze Age. This session invites papers that deal with the transition from a range of different perspectives, focusing, for example on settlement patterns, technology, mortuary practice, climate, or various forms of cultural expression. Regional or thematic case studies and papers that approach the methodologies and concepts used in current archaeological research dealing with transitions are also invited.

#### **A38.01: Transcultural architecture: identity and hybrid practices in the Western Mediterranean at the beginning of the Iron Age**

by Beatriz Marín-Aguilera (Complutense University of Madrid, Spain)

Archaeologists have placed great emphasis on elite burials and objects. As a consequence, the continuation of local practices between the Late Bronze Age and the beginning of the Iron Age in the Western Mediterranean has been repeatedly silenced. Phoenicians and Greeks' arrival to this area seems *only* to highlight the 'Orientalizing' way of life of the elite through the appropriation of oriental goods. Changes in architecture, however, only took place from the 7<sup>th</sup> century BC onwards in both South Etruria and South Iberia. Furthermore, during this period most of people in these areas continued to live in huts even when the great burial mounds were being built. The combination of changes –roof-tiles, rectangular layouts– and continuity in the use of space shows the transformation of the local identity in an ambivalent colonial situation. This paper seeks to explore local hybrid practices and thus identity changes through architecture in South Etruria and South Iberia between the 9<sup>th</sup> to 6<sup>th</sup> centuries BC.

#### **A38.02: A brand new era? Changes and continuity between the Bronze and the Iron ages in the Mediterranean north west**

by Alexis Gorques (Université de Bordeaux 3-AUSONIUS, France)

VIII century BC is a time of change in the western Mediterranean. The foundation of Massilia (c. 600 BC) and of Emporion (c. 580 BC), two Phocian colonies, bring the Greek world to the shores of Gaul and Iberia. Meanwhile, the structure of native societies' archaeological "identity" seems to become more homogeneous and more permanent: a new network of hillforts dominate the landscape, fabrication and use of wheel-made pottery become systematic, and after some time, writing appears and gives a linguistic identity to our archaeological cultures. The classical Mediterranean Iron age, with its Iberians and Southern Gauls, emerges from the dark. The colonization from the eastern Mediterranean would have exposed natives communities to new influences, mainly due to trade, provoking as a consequence major social evolutions.

In this paper, we will stress the fact that the "great changes" of the VIII cent are not, for native societies, as deep as it seems. Iron Age settlement patterns and production system have in fact their roots in the end of the Bronze Age (LBA III, 950-800 BC). Thus, the reasons for these changes can't be Greek colonization. We'll see that they lay in interpersonal and intergroup competition.

### **A38.03: Theatres of Change: Continuity, discontinuity and place in the Late Bronze Age-Early Iron Age Transition in Central and South-eastern Slovenia**

by **Philip Mason** (*Institute for the Protection of Cultural Heritage of Slovenia, Slovenia*)

The Late Bronze Age-Early Iron Age transition in central and south-eastern Slovenia in the 9<sup>th</sup> and 8<sup>th</sup> centuries BC was a time of considerable change with apparent discontinuity in mortuary practice and the settlement pattern, the appearance of new technologies, the emergence of visible elites and increasing contact with the circum-Adriatic area and south-eastern Europe, although it is clear that many elements of continuity are present.

The paper seeks to examine the transition from relatively undifferentiated flat cremation cemeteries to differentiated burial in barrow cemeteries and from small upland and unenclosed lowland settlements to large hillforts, through an examination of the archaeological evidence from the major centres in the area, the theatres of change, which in many cases have clear evidence for continuity from the Late Bronze Age to the Early Iron Age. It is suggested that the evidence indicates that this was a period of experimentation, in which increasingly visible social differentiation was negotiated through changing settlement structures and locations, the combination, elaboration and transformation of mortuary structures and burial rites. It also seeks to examine the changing nature and role of particular types of artefacts and material in the area, especially exotic artefacts and iron itself.

### **A38.04: Continuity and/or Innovation? Recent research about the Late Bronze Age to Early Iron Age transition in North-eastern Slovenia**

by **Matija Črešnar** (*Institute for the Protection of Cultural Heritage of Slovenia, Slovenia*)

There is little doubt that the transition from the Late Bronze Age to the Early Iron Age is one of the major turning points in European prehistory. That is also the case in North-eastern Slovenia, the region located between the fringes of the south-eastern Alpine world and the Pannonian plain.

The change may appear abrupt as the settlement pattern and the mortuary practice seem both to change quite radically and other forms of cultural expression also undergo clear changes. However, when examined in detail, the situation looks less clear. Research carried out in the recent years, including the use of new methods and modern technologies, has shown that first changes, e.g. in the settlement pattern, appeared much earlier and that some traditions show obvious continuity. That is a time period when the "old" and the "new" coexist and when the fundamentals of the new era are being laid.

The more we appear to know, the more complex the questions about the continuity and/or innovation of the different facets of the transition from the Late Bronze Age to the Early Iron Age become, as do the questions of who, what and when has provoked them...

### **A38.05: Technologies of Change: Iron and Transitioning Societies in Ireland**

by **Kevin Garstki** (*University of Wisconsin-Milwaukee, USA*)

The abrupt shift of the Bronze-Iron Age transition suggested by the Three Age System has in many ways obscured what was a long, drawn-out process of technological development. The beginning of ironworking as the hallmark of Iron Age society results in the implicit assumption that iron burst onto the prehistoric scene, fully formed as a superior technology. However, the alternative, that iron techniques had to be developed over hundreds of years, presents a different picture that is a better reflection of the apparent discontinuities across this transition. Though iron was but one of a myriad of factors involved in the changing field of social relations during this transition, the cumulative effects of the development of iron technology had profound implications for power inequalities and the production of social identities. In this paper, I will present the case of early ironworking in Ireland to frame the discussion of the how we may conceptualize the Late Bronze Age-Iron Age transition as a gradual process of technological change and societal response, through which Ireland's place in the Atlantic information exchange network was significantly affected. I will explore the ways that developing technologies impacted existing power structures and fluid intra- and inter-societal dynamics.

**A38.06: The Late Bronze Age-Iron Age transition in Ireland – the relationship between climatic and demographic collapse at 800 BC**

by Katharina Becker (Bradford University, UK), Ian Armit (Bradford University, UK)

The transition between the Bronze Age and the Early Iron Age is in many regions of Europe characterised by a drop-off in levels of human activity, evidenced by relative frequency of sites and artefacts. Also in Ireland, the Late Bronze Age, one of the most distinct and prosperous cultural phases in Irish prehistory comes to a sudden end. It has long been suspected that climatic change at the end of the Bronze Age lies at the root of this transition, with colder and wetter conditions possibly causing economic and social collapse and an essentially catastrophic end to the Late Bronze Age. Our project has compiled a large dataset of archaeological and climatic data that allows the comparative analysis of levels of human activity and climate change with a previously unachievable degree of chronological control. Our results demonstrate that, contrary to some previous beliefs, a significant drop-off in human activity can be evidenced before a pronounced change in climate. This highlights that any correlation between archaeology and climate needs to be demonstrated with high quality, high precision dating, and that previous models of the relationship between the two may be simplified, underplaying other, non-climatic causes for economic and cultural change.

**A38.07: Sculpting the land: changing patterns of land use around Wetwang-Garton Slack, East Yorkshire**

by Emily Fioccoprile (University of Bradford, UK), Rachael Kershaw (University of Bradford, UK)

During the first millennium BC, the people of the chalk landscapes of the Yorkshire Wolds (East Yorkshire, UK) sculpted their world with monumental linear earthworks and enclosures. Linear earthworks dominated the land, mirroring society and materialising cosmology at a time of great change, and yet the paucity of scientific dates from these monuments means that their role in the transition from Bronze Age to Iron Age is poorly understood. This paper explores this transition by tracing changes in land use around the site of Wetwang-Garton Slack in East Yorkshire. Excavated from the 1960s to 1980s, this site is well-known for its extensive, multi-phased Iron Age settlement and adjoining cemetery, which were laid out along a linear earthwork upon the remains of an earlier Neolithic and Bronze Age funerary complex. The convergence of earthwork, settlement and cemetery provides a rare opportunity to assess the chronology and phasing of land division on the Wolds. Building upon the work of previous scholars, this paper uses archival material to examine how—and exactly when—the linear earthworks around Wetwang-Garton Slack would have transformed the ways in which people used, experienced and moved across their land.

**A38.08: Long-term transitions – development of settlement systems and land usage in Western Jutland, Denmark**

by Niels Algreen Møller (Museums of South West Jutland, Denmark)

The paper deals with the Bronze Age – Iron Age transitions by considering cultural change within different find categories with a main emphasis on settlements and land usage in Western Denmark.

Traditionally the transition between Bronze Age and Iron Age is in Denmark defined by imported metal artifacts following the Hallstatt D1 to Hallstatt D2 transition app. 500 BC. This date roughly corresponds with the earliest evidence of iron production in the area.

The transition starts much earlier though. In the Late Bronze Age there are major changes in burial customs, wetland metal deposits and settlements. In Late Bronze Age per. VI the main cultural expressions are thus a prelude to the Early Iron Age Culture, so the “great divide” between Bronze Age and Iron Age around 800 BC seen in large parts of continental Europe and Britain is also visible in the late Nordic Bronze Age Culture.

The Bronze Age – Iron Age transition is thus a prolonged phenomenon in Denmark with different timing of the major developments within different find categories.

**A38.09: Regional settlement patterns at the transition from Bronze to Iron Age in Denmark**

by Mads Runge (Odense City Museums, Denmark)

A recently submitted ph.d.-thesis focuses on the reconstruction of regional settlements patterns at the transition from Bronze to Iron Age. The thesis compares the classical picture of the settlement pattern with other regions where intensive archaeological investigations have been undertaken for the last decade. Especially the analysis of a couple of settlement mounds from Northern Jutland and the excavations of an area of 350 ha on the island Funen are in focus and brings a wide range of new perspectives concerning the transition.

The regional settlement patterns are formed as a result of natural preconditions and resources, the internal organization and dynamics of the settlements and the regional interaction, hierarchy and settlement organization. Stressed regions tend to develop strict governance and a high degree of specialization, regions with specialized subsistence economies are characterized by regional strategies of subsistence economies and finally central places and leaders have a two-sided role as innovators and conservators in society. The analysis points out that the transition from Bronze- to Iron Age must be understood in a long-term perspective and in some regions is relatively abrupt, while in others seamless.

### **A38.10: Scandinavian rock-art and the Bronze Age–Iron Age transition**

by *Peter Skoqlund* (*Department of Historical studies, Sweden*)

Oscar Montelius' chronology for the Scandinavian Bronze Age set the transition to the Iron Age around 500 BC. This rather late dating of the Scandinavian Bronze Age–Iron Age transition has hampered a comparative European perspective on the period in question. However, recent research has demonstrated significant changes in settlement pattern and farming practices in southern Sweden around 800 BC. These changes should be understood in a European perspective as related to major social and economic changes at the onset of Hallstatt C.

Even though primarily focused on rock art, this paper takes its starting point in the above perspectives. It will argue that Scandinavian rock-art was transformed in the 8<sup>th</sup> and 7<sup>th</sup> centuries BC due to influences from Central and Western Europe. These influences are seen in the display of typical Hallstatt features like swords with winged chapes, wagons and riders but also in a greater emphasis on rank and social positions.

However, the influences from Western and Central Europe were incorporated into a Scandinavian setting with a strong maritime focus, thus creating a new hybrid culture which merged elements from regions with various cultural and geographical backgrounds.

### **A38.11: Between east and west – continuity and change between Bronze Age and Iron Age in the North**

by *Mika Lavento* (*University of Helsinki, Finland*)

In the region where the impulses came both from the west and east, the populations in the culture had room to develop versatile. The western part of the area followed the phases of the culture in Scandinavia from the beginning of the period till the end of it. At the end of the Bronze Age seems to indicate depression before the Iron Age began.

The settlement history in inland proceeded in a different way. During the deepest depression, the culture began to develop. Most easily this came visible through the local subtypes of ceramics in the end of Late Bronze Age and during the Early Iron Age. The Ananino bronze working offered an important addition to the phenomenon and indicated the long-distance connections between the local groups.

The purpose of my presentation is to uncover the research and archaeological perspectives on the Bronze Age and the Early Metal Age in Finland. The main material, I will take into a discussion are metals and ceramics in addition to dwellings sites and cairns as the starting points of the discussion. What is also important is to approach the complex relations of the small populations living in a relatively large area.

## **POSTERS**

### **A38.01-P-3: Continuity and Discontinuity in Late Bronze Age in Transylvania**

by *Wittenberger Mihai* (*National Museum of History of Transylvania, Romania*)

The present paper tries to bring a valuable input in understanding the phenomena and processes from the end of the Bronze Age in the Eastern Carpathian Basin.

I took into consideration the population movement from the end of the Middle Bronze Age, when the big 'classic' cultures disappear, and their place is taken by the cultural complex Noua Sabatinovka-Coslogeni.

Taking into consideration an apparent discontinuity of the population, it is rather homogenous from the point of view of metal working, even if there appear new forms. Bronze, silver, gold production, change Transylvania into a significant turntable in this part of Europe.

Religious beliefs change, an issue which is visible in burial habits, but the types of dwellings remain the same, open.

Climate changes which follow after this period will change tremendously the society of the First Iron Age.

Passing to the Iron Age is done gradually, while different populations enter from North-West, and we can identify the three phases of the Noua Culture in Transylvania. The period in question, between the Late Bronze Age and Ha is for sure the 'gold period' of the Bronze Age in this part of Europe.

**A38.02-P-3: How the world is changing around? The late Bronze Age and an early Iron Age from southern Baltic coast perspective.**

by Katarzyna Ślusarska (University of Gdansk, Poland)

The transition from the Bronze Age to the Iron Age in Pomerania is associated with a fairly radical change, in the particular burial rituals. Although the cremation is still practiced, a funerary architecture and types of container for ashes faces fundamental change. On early Iron Age cemeteries burial mounds are replaced by flat graves with stone cists. Urns in shape of vases are replaced by house-shaped urns or faced urns. It could be perceived as a manifestation of change in vision of the human condition and his posthumous fate. The main aim of presented paper is to present this phenomenon of the background of the changes taking place in the natural and cultural environment of southern Baltic coast at that time.

## Session A39

### Thinking about health and diseases in archaeology

Thursday, 5 September 2013, 08:30–13:00

Room: UP 101 (Building 2, ground floor)

**Organisers:** **Darek Błaszczyk** (Museum of the First Piasts at Lednica, Poland), **Magdalena Domicela Matczak** (Adam Mickiewicz University in Poznań, Poland) and **Hélène Réveillas** (INRAP Grand Est Sud, France)

The session seeks to consider, rethink and discuss studies on health and diseases conducted in various archaeological sub-disciplines, e.g. bioarchaeology, medical archaeology, archaeology of disability, humanistic archaeology, etc.

Firstly we will consider terminology: can we really name people with diseases as disabled or impaired?; as well as specific methods and type of materials used for this kind of studies. Secondly, the discussion will focus on interpretation: what does it mean to be ill and healthy within a given society? Themes considered will include: perception of the diseased and the healthy; the social status of people with health problems during their life and after the death; identities related to sex/gender, age, profession and religion; and last but not least emotions and feelings of people who lived through with diseases. As a third objective of the session we will explore and evaluate theories that can be used for explaining and interpreting patterns of disease in archaeological and osteological materials.

We invite papers examining cultural remains such as artefacts and art, documentary evidence, the biological remains such as skeletons and mummies from all prehistoric and historical periods.

#### A39.01: Experiencing health in prehistoric Europe: an anthropological view

by **Sheila Kohring** (University of Cambridge, UK), **John Robb** (University of Cambridge, UK)

What is "health"? The concept of health is a cultural interpretation of the medical states of peoples' bodies. Modern societies tend to measure health in terms of dysfunction, as how far a particular body falls short of a bureaucratically-defined, standardised and universalised body. Palaeopathologists tend to follow modern Western medical guidelines of health and illness, with the additional caveat that "pathologies" are defined by our ability to observe them in the skeleton rather than by their clinical symptoms (the 'scanning technology' issue familiar to medical anthropologists) or their socio-medical importance. But what did prehistoric people consider "health" to be? There are three potential sources which this paper and study draw upon: the human experience of illness, as far as we can understand it from skeletal evidence, representations of bodies in art and burial evidence for how people with different conditions were treated in death. These kinds of data sometimes give us information for understanding the categorisation of health and illness in their local social context.

#### A39.02: Decyphering differences: An archaeo-anthropological reading of physical handicap in past society

by **Valérie Delattre** (Inrap, France)

Anthropology is a discipline closely related to funerary archaeology, which aims to study what is most intimate about the human being, using biological aspects, imprinted on the bone itself and cultural phenomena, recreated thanks to the actions and intentions that precondition a burial. The human being, honoured or insulted by its contemporaries, leaves many cultural indicators making it possible to determine the nature of a social group.

Funerary practice allows a population to confront the problems created by death and the deceased, but also maintains the bonds between the living. We are thus able to focalize on the status of the "different body", whose unique anatomical characteristics have until recently been only studied from a pathological angle. But beyond the simple census of the body's lesions, is it possible by archaeo-anthropological investigation to determine status, social role, inclusion or exclusion of "handicap" within a community.

#### A39.03: The Desire for Health and as a Desire for Prosperity

by **Pavel Titz** (Charles University in Prague, Czech Republic)

The paper presents a specific group of findings from the central Italian regions of Tuscany, Latium and Campania. Numerous excavated shrines and cult places often reveal terracotta votive objects attesting to common religious praxis of offering these artifacts in great numbers to local deities. These votives were extremely popular mainly from 4th to 1st century B. C. and some are valuable as they well depict the variety of perishable goods being offered in that time. Thousands of these terracotta votives represent particular body parts of the worshipper (so called anatomical votives) and often "somehow" depict concrete problems with the hope of being cured with a help of the deity.

Besides these, there are other groups of votives with a less straightforward message to the divine power. It is reasonable to approach them still as possibly being about regarding both human and herd health. Some represent mothers with children, others newborn babies and some even body parts of domestic animals.

Distribution of these votives as well as their frequent presence in almost all sanctuaries and cult places in central Italy make these objects very important for our understanding of human concern in health and possibly other health related matters of that time in everyday life.

#### **A39.04: Health, disease and social status in Jetyasar society (Early Iron Age, Aral region)**

by ***Tatiana Shvedchikova*** (*Institute of Archaeology of Russian Academy of Sciences, Russian Federation*)

The concept that physiological disruptions are highly connected to the way of a human's life and in some degree could be used for social reconstructions, allow us to deal with "stress markers", which could be found during the bioarchaeological investigation of human bone remains. The study of Jetyasar archaeological culture which had been formed by the population of Early Iron Age in the Eastern Aral region gives us the opportunity to observe the presence of different stress markers such as porotic hyperostosis, *cribra orbitalia*, linear enamel hypoplasia, dental caries, periostitis, and trauma accompanied by another phenomenon – the artificial cranial deformation. Different types of head molding and application of different techniques of shaping has been detected among the members of Jetyasar society. The eastern Aral was on the crossing of trade and migration ways from early ages and has been one of the most important areas of constant cultural and ethnic contacts between nomads of the Eurasian steppes and agriculturists of Middle Asia. Comparison to the independent examples of well stratified societies practicing artificial head deformation poses the question about the accuracy of using the complex of "stress markers" in the reconstructions of social stratification among ancient populations.

#### **A39.05: The man from medieval Kalisz (Poland) as an example of long life with multiple pathological changes**

by ***Tadeusz Baranowski*** (*Institute of Archaeology and Ethnology PAN, Poland*), ***Robert Zukowski*** (*Institute of Archaeology and Ethnology PAN, Poland*)

In the cemetery at the church in the Kalisz-Zawodzie stronghold the grave of a man (about 35-40 years old) with multiple congenital defects was discovered. The grave can be dated to the first half of the 13th century. Anthropological analysis of the skeleton defined deformation as *Ectromelia Brachialis* – which means that there was no right humerus, and a partial lack of forearm and hand. Moreover, the man had a strong right-sided scoliosis. This is the only known case of such deformations coming from archaeological materials and it rarely occurs even in modern medicine.

This strong handicap suggests that during his early life this man had to be totally dependent on relatives. However, he was relatively well nourished and the development of his left hand to be used instead of two implies that as an adult he could almost lead a normal life.

A deciding factor that prevented this man from being moved away to the margins of society was probably his social status. The lack of funerary equipment prevents reasoning on this basis, but the location of the grave close to the wall of the church of St. Paul's in the center of medieval Kalisz indicates that the person in question belonged to a higher social class.

#### **A39.06: Emotions and illness in the Middle Ages**

by ***Magdalena Matczak*** (*Adam Mickiewicz University, Poland*)

In my paper I present a view on emotions from a social bioarchaeological perspective. I present skeletons with markers after diseases from the sites of the early medieval (10th–13th century) *Culmn* in Poland. The research questions are: 1) How to find emotions which are hidden in the skeletons. Emotions such as: fear of the ill, empathy to and compassion for them, sadness and sorrow after the bereavement, aggression to the outcasts, hope for healing, respect to the deceased, anxiety etc. 2) How to investigate social relationships between the ill and the healthy. 3) How to (re)construct social status of the ill through emotions. Emotions of the healthy towards the ill might help in understanding the social status of the ill in past communities. In terms of the archaeological, cultural analysis the so-called anti-vampire or atypical graves might be examined in relation to the illness and emotions. Especially, it is the setting of the body in the grave which shows hidden or explicit emotions of the living to the dead.

### **A39.07: Identifying the 'Lost' Plague Victims in Medieval England**

by **Alison Atkin** (*The University of Sheffield, UK*)

During the 1348–49 winter outbreak of the Black Death in England, and through subsequent outbreaks during the later 14<sup>th</sup> and 15<sup>th</sup> centuries, hundreds of thousands, if not millions of individuals died. The sheer number of the dead, relative to those who survived, would have had an impact on burial practices. The discovery of mass graves, such as those at the Royal Mint site in London, attests to this eventuality. Yet, for all of those dead, to date we have identified very few of them in the archaeological record.

It is here suggested that in addition to the use of mass graves, the structured burial of the dead with normative burial practices also occurred following episodes of mass mortality. This led to mixed-mortality assemblages (attritional *and* catastrophic) that to date have been un- or mis-identified in the archaeological record.

This paper will present preliminary results from an on-going project which combines demographic data from archaeological examples, along with evidence from contemporary documentary sources, and a multi-disciplinary approach. This research aims to identify episodes of mass mortality as a result of the Black Death in Medieval England and discuss changes to burial practices and funerary rights during and after the Black Death.

### **A39.08: Contribution of archaeo-anthropology for the understanding of the health status of past populations: the example of medieval and modern hospital cemeteries in France**

by **Hélène Réveillas** (*UMR 5199 – PACEA – Université Bordeaux 1, France*)

The health of past populations remains difficult to define, that we focus on written sources, iconography or archaeological remains (skeletal remains, medical tools, molecular biology, parasitology, etc.). An archaeo-anthropological approach, that combines the study of funerary practices and of human bones, provides interesting informations on how patients could be considered in the past, and assimilated within the society, for instance, through the community cemetery. In this paper, we focus more particularly on hospitals of the Middle Ages and the modern period in France, and the subjects they could welcome. We will consider the differences between them; if some were specialized in pathology, or had a more general activity. We will also see if differences exist, depending on the period. It will be interesting too to look at sprains settlements to the regulations that have occurred, with the care of victims of crisis mortality epidemic for example.

### **A39.09: Bioarchaeology and Archives Getting Along: Diseases, Epidemics and Demographic Crises as Seen from Sv. Benedikt in Prague (17<sup>th</sup>-18<sup>th</sup> c.)**

by **Pascal Sellier** (*CNRS, UMR 7041 ArScAn, France*), **Dominique Castex** (*CNRS, UMR 5199 PACEA, France*), **Kevin Salessse** (*Univ. Bordeaux, UMR 5199 PACEA, France*), **Petr Velemínský** (*National Museum, Czech Republic*), **Hedvika Kuchařová** (*Library of Royal Canonry of Premonstratensians at Strahov, Czech Republic*), **Zdeněk Dragoun** (*National Heritage Institute, Czech Republic*), **Jaroslav Bruzek** (*CNRS, UMR 5199 PACEA, France*)

The mass-burials from the cemetery of St. Benedikt in Prague (Svatý Benedikt, Praha, Czech Republic, 17<sup>th</sup>–18<sup>th</sup> centuries) provide an outstanding skeletal assemblage for the study of mortality crises from the past. In the Baroque period, St. Benedikt was a Premonstratensian canons church and monastery, a dependency of the mother house of Strahov mostly devoted to a seminary school.

A first study, with few historical data, had concluded that those numerous simultaneous deaths could be the result of a plague epidemic. But a new analysis, based on large numbers of well preserved skeletons, sheds a new light on this mortality crisis. Our methods have taken into account many data and works from different sources: archaeology, bioanthropology, demography, history (archives) and isotopes.

In the mass-burials, the paleopathological analyses have not shown any violence-related injuries and the demographic pattern (with young adult males over-represented) is highly selective but does not fit with a plague mortality. New data, including radiocarbon dates, texts from the Premonstratensian's archives, archaeological artifacts and isotopic analyses (multi-elements:  $\delta^{13}\text{C}_{\text{app}}$ ,  $\delta^{18}\text{O}_{\text{app}}$ ,  $\delta^{13}\text{C}_{\text{env}}$ ,  $\delta^{18}\text{O}_{\text{env}}$ ,  $\delta^{13}\text{C}_{\text{CO}}$  and  $\delta^{15}\text{N}_{\text{CO}}$ ), give evidence for a famine episode during the 1742 siege of Prague where foreign soldiers (from France and Bavaria) have died.



### **A39.10: Post-medieval burials by Kristiansand Cathedral**

by Yvonne Willumsen (*Vest-Agder County Council, Norway*)

The city of Kristiansand was founded in 1641 and soon after the first Cathedral was built. Throughout history Kristiansand has been struck by several fires and many of its wooden houses and churches, as well as many valuable historical records, have vanished.

West-Agder County Council (VAF) conducted in 2009 and 2010 two archaeological excavations at the Cathedral site. The first investigation was held inside the crypt, the second outside the Cathedral's walls – within what is known as the Layman's cemetery, just to the northern side of the Cathedral's walls.

These recent investigations have uncovered well-preserved skeletal remains which represent Christian burials dating back to the seventeenth and eighteenth centuries. Analysis of the skeletal remains has provided valuable knowledge about the previous inhabitants of the city. The information gathered regarding age, health and diseases has filled what was a gap in the historical records due to the many fires that the city has endured.

This paper will present the results of the osteo-archaeological analyses and will discuss how they can be used to provide knowledge about the inhabitants of Kristiansand during the 17<sup>th</sup> and 18<sup>th</sup> centuries.

### **A39.11: Health in the kingdom of France during the modern period: anthropological studies of cemeteries in western France**

by Isabelle Souquet-Leroy (*Institut National de Recherches Archéologiques Préventives, France*), Mark Guillon (*Institut National de Recherches Archéologiques Préventives, France*)

The increase in excavations of modern period cemeteries allows today to know better the urban populations of French *Ancien Régime* through anthropological studies.

Our programme recommends conducting research on a population's health using very different funeral contexts in order to obtain the most representative sample of urban populations in western France.

Different kinds of data such as biological (age, sex, dental and osseous pathologies), funeral (individual, multiple burials) and religious (Protestants or Catholics) allow us to define firstly the global sanitary level of these populations, according to their geographical and social origin and secondly to consider the proportion of the individuals with a pathology within the population. Various degrees of illness effects must be thus determined, from the least to the most disabling. The term pathology might be redefined in some cases.

More exactly, burial context (parish or hospital cemetery, catastrophic context) of these populations allows us to discuss the impact of diseases on the life of individuals and to determine those of them who were cared for in specialized institutes and those who were treated themselves without professional medical aid.

The aim of our research is to obtain the most realistic medical assessment of the society of the *Ancien Régime* from archaeological, anthropological and historical data.

### **A39.12: Osteological evidence for rheumatoid arthritis in the Early Modern Age cemetery Drinovci – Greblje from Croatia**

by Željka Bedić (*Croatian academy of sciences and arts, Croatia*), Željko Demo (*Archaeological Museum, Croatia*), Mario Šlaus (*Croatian academy of sciences and arts, Croatia*)

In 2012 the Museum of Croatian Archaeological Monuments and the Archaeological Museum in Zagreb conducted systematic archaeological excavations in the hinterland of Dalmatia at the site Drinovci – Greblje. Twenty two graves dated to the second half of the sixteenth century were excavated and analyzed in the Anthropological centre of the Croatian academy of sciences and arts. One skeleton attracted the attention of archaeologists and anthropologists. This skeleton was buried in a contracted position laying on its back which is a unique position for this time period. Anthropological analysis revealed that this 40–50 years old female suffered from pronounced osteoporosis, and chronic disease that affected all of the preserved joints. The most involved joints were the joints of the hands, temporomandibular joints, and the cervical spine that exhibited total destruction of the dens axis of the second vertebrae. This pathological picture is consistent with rheumatoid arthritis, which is a symmetric, inflammatory, peripheral polyarthritis of unknown etiology. Differential diagnosis includes psoriatic arthritis, septic arthritis, osteoarthritis, and other conditions that will be discussed. An additional question is whether the unusual position in which this individual was buried can be explained by the severe rheumatoid arthritis that affected it?

### **A39.13: Diagnosing Scurvy in Archaeological Record**

by **Dejana Nikitovic** (University of Toronto, Canada), **Petra Rajic Sikanjic** (Institute for Anthropological Research, Croatia), **Zrinka Premuzic** (Institute for Anthropological Research, Croatia)

Scurvy is a metabolic disease that develops as a result of the prolonged vitamin C deficiency in the diet. Presence of scurvy in archaeological populations can contribute to our knowledge about their diet, health and socioeconomic status. It has been suggested that vitamin C deficiency causes a specific pattern of skeletal lesions, enabling scurvy identification in human skeletal remains. Since the late 1990s, when a skeletal diagnostic procedure for scurvy was established, a growing number of studies, focusing on scurvy among archaeological populations have been published. However, studies reveal a demographic pattern unusual for scurvy – with high occurrence of scurvy associated lesions among newborns and infants.

A similar pattern is observed at Uzdolje-Grablje, a late medieval site in the Dalmatian hinterland in Croatia. The analyzed sample consists of 16 juveniles. The majority of the sample exhibits at least one skeletal lesion associated with scurvy. In this presentation we explore current diagnostic procedures in light of clinical studies, scurvy aetiology, and the mechanism of lesions' formation.

### **POSTERS**

#### **A39.01-P-2: Health and Illnesses of Charles I and Louis the Great, Angevin Kings of Hungary**

by **Annamária Bartha** (University of Szeged, Hungary)

Official documents and pictorial representations give us a fairly clear picture of the illnesses and injuries of Charles I (1301-1342), and also about the ways in which these influenced his political and military endeavours. Three known assassination attempts, among them the famous attack of Felician Zah, were committed against him, and his frequent illnesses often influenced his foreign policies, sometimes even his military undertakings. We are in a much more fortunate situation when dealing with his son, Louis I, because both inland and foreign narrative sources provide us with a much more detailed picture. The bold monarch was injured multiple times, survived the plague and multiple assassination attempts. The researchers were convinced for a long time that the cause of his death was leprosy. I examine this problem in details. The skeletal remains of the rulers have not been identified among the Fehérvár finds yet, which leaves many questions opened. Many royal doctors are known from the period, among them some intellectuals with interesting careers.

#### **A39.02-P-2: Health and quality of life in the Early Modern Period St. Claire Monastery in Croatia**

by **Jozo Perić Peručić** (Croatian Academy of Sciences and Arts, Croatia)

This poster presents the results of the anthropological analysis of the osteological material excavated at the site of St. Claire's convent near the church of St. Mary's Annunciation on the island of Krk. A total of 10 grave units dated to the Early Modern Period were excavated. The graves contained the remains of 33 individuals (15 females, 7 males, and 11 subadults). The average life span for adults was 49.8 years (53.3 for males, and 46.2 for females). Quality of life and health were assessed using standard anthropological analysis that included determining the sex and age at death of the recovered individuals, exposure to subadult stress (*cribra orbitalia*, linear enamel hypoplasia, and ectocranial porosity), indicators of dental health (caries, antemortem tooth loss, and alveolar disease), indicators of habitual excessive physical labour (degenerative osteoarthritis, Schmorl's nodes on the vertebrae), indicators of non-specific infectious disease (periostitis), and the presence of deliberate trauma that would indicate of a high level of interpersonal violence.

#### **A39.03-P-2: Trephination of the skull among the population of the Khazar Kaganate**

by **Irina Reshetova** (Institute of Archaeology of Russian academy of Science, Russian Federation)

The rite of skull trephination has been known and widely practiced among the various ethno-territorial components of the Saltovo-Mayaki culture (the Khazar Kaganate). In the Middle Don area there were found different variants of the custom – symbolic and surgical trephinations.

Numerous cases of symbolic trephinations were found among pit burials of this culture, associated by researchers with a population of Turkic origin. According to some researchers, they are well-known subethnic marker, uniting the military elite.

It is important to note that in the 10<sup>th</sup> century the same version of the symbolic trephination has received the most widely spread among the population of the Great Plain of Hungary, where it is found in the necropolis with very different anthropological composition. Link in the translation of cultural markers in Europe during the mass migration could be not only Turks, but also Ugric component. The widespread emergence of such phenomena testifies to the dissemination of general knowledge, the continuity of traditions and the presence of contacts of different cultures among themselves.

## Session A40

### Towards a real representation and interpretation of spatio-temporal data in Archaeological Record

Saturday, 7 September 2013, 16:30–18:30

Room: EP 206 (Building 1, 1st floor)

**Organisers:** **Alfredo Maximiano Castillejo** (Universidad de Cantabria, Spain), **Enrique Cerrillo Cuenca** (Consejo Superior de Investigaciones Científicas, Spain), **Xavier Rodier** (Université François Rabelais-CNRS, France) and **Bastien Lefebvre** (Université de Toulouse II-Le Mirail, France)

Nowadays, an increasing interest for spatio-temporal analysis in archaeological issues can be appreciated in archaeological literature (i.e. Johnson 2004; Santiago 2008; Huisman et alii 2009; Llobera 2011, among others). The continuously evolving field of computing applications in Archaeology is here presented as the most opportune, but not the only, framework to manage spatio-temporal data in terms of representation (for instance graphical visualisation in a GIS application) and analysis. On the other hand, the archaeological record seems to be an optimal background to implement spatio-temporal methods, since due to its nature, archaeological features can be represented in terms of location, spatial relationships, and temporal components (distributions or artefacts, structures, etc).

In this regard, an extensive spatial-temporal analytical methodology is being applied in other social disciplines (i.e. “Spatio-Temporal Kernel Density Estimation” or “Spatio-temporal Scan Statistics” in Nakaya & Yano 2010). Nevertheless, these issues have not been fully implemented in archaeology because we probably cannot define our spatial (and temporal) problems in adequate directions. Under this panorama, it would be interesting to re-formulate our perception of variance in space and time; and what is more important, we should be able to define a heuristic solution about our spatial and temporal problems in key of perception and interpretation of this variance.

For example, an important subject is the massive incorporation of calibrated dates, which offer a temporal congruence in terms of numerical chronology (in front of classical chrono-cultural series). This concern could represent an improvement to establish a chronological definition of archaeological events in terms of succession. But are we managing the integration of chronologies with spatial data in a coherent manner?

Focus points in this session are:

- i. To discuss the opportunity to establish stronger links between archaeological theory and methods, regarding to the analysis of spatio-temporal data.
- ii. To deliberate about possibility of spatio-temporal methodology in archaeological circumstances, independently on the use, regardless of the use of concrete computing solutions (GIS, statistical packages, etc).
- iii. To generate an open discussion on a adequate and congruent way of thinking about spatial-temporal variance. Moreover, how to consolidate the approach and limits of these proposals.

Cases studies are welcome in this session: intra-site analysis, surface survey, landscape analysis and any other archaeological field that could be analysed through spatio-temporal variables. Oral presentation should focus on what could be the best way to illustrate the real opportunities of space-time perspective in Archaeology. In this sense, we are interested in contributions that put the stress on theoretical reflections (from archaeological objects to spatial and time information), as well as methodological arguments (mathematical algorithms, analytical visualisation procedures...).

#### A40.01: Site Structure and Domestic Organization in a Coastal Shell Midden in Southern California

by **Richard Ciolek-Torello** (Statistical Research, Inc, USA), **Phillip Leckman** (Statistical Research, Inc, USA), **William Hayden** (SWCA, USA), **Stephan Norris** (Statistical Research, Inc., USA)

The investigation of prehistoric site structure and domestic organization has often depended upon finding houses. Unfortunately, the ephemeral architecture and poor preservation of most coastal hunter-gatherer sites in southern California leave little evidence of houses. Hearths, caches, ritual features, and refuse deposits are the only tangible remains of prehistoric habitation. More sophisticated spatial-temporal analytic tools are required to examine the spatial relationships between these types of features than those found within the well-defined boundaries of houses. In this presentation, we discuss a case study in which spatial-temporal analytic tools are used to examine hundreds of domestic features found in a large midden site. A large suite of radiocarbon dates was used to determine which features were contemporary. A hypothetical occupation surface was then calculated using aggregates of the individual elevations of these features. Surface interpolation was done using ESRI Geostatistical Analyst Tools extension for ESRI ArcGIS. Finally, statistically significant spatial clusters of features associated with this surface were identified using several methods of point-pattern analysis, including Ripley's *K* and reconstructions of estimated feature density. These clusters are interpreted behaviorally as potential household units, and examined in terms of cross-cultural research into hunter-gatherer family structure, domestic organization, and group dynamics.

**A40.02: Accumulation and expansive processes in archaeological spatio-temporal analysis: from a micro to a macro scale.**

by *Katia Francesca Achino* (Autonomous University of Barcelona, Spain), *Giacomo Capuzzo* (Autonomous University of Barcelona, Spain), *Juan Antonio Barceló* (Autonomous University of Barcelona, Spain)

Traces of past human social actions were fossilized in the visible archaeological record. The analysis of accumulations composed by spatially discrete aggregations of artefacts, bones, features, debris, can be used as an inference about past behaviour. Hence, the archaeologists can reconstruct the framework of prehistoric societies both in space and in time, including the settlement patterns and the spreading movements. The quantification of space-time variables allows us to detect possible gradients in two geospatial datasets. The combination of archaeological contexts described by geographic coordinates, artefacts distributions and 14C dates offer the opportunity to model accumulative and expansive processes. When a system expands through time and space, we can foresee a certain degree of dependence between locations, and this dependence is exactly what gives an appearance of unity to the process. From a micro to a macro scale we have integrated in the same methodological scheme two case studies of the Bronze Age: the pile dwelling site of Villaggio delle Macine (Rome-Italy) and the space-time distribution of 14C dates included in a European database of archaeological contexts between the Ebro and the Danube River. These examples help us to describe different hypothetical scenarios in Protohistoric Europe.

**A40.03: A particular case of the time-space issue in archaeology : the use of GIS by archeo-anthropologists to analyse collective burials**

by *Camille de Becdelieuvre* (Faculty of Philosophy, University of Belgrade, Serbia), *Caroline Laforest* (University of Bordeaux 1, France), *Dominique Castex* (University of Bordeaux 1, France), *Sandrine Thiol* (INRAP, France), *Stephane Rottier* (University of Bordeaux 1, France)

A collective sepulture is conceived to receive successive depositions of bodies, which requires, most of times, an organisation of the funeral space. Such a palimpsest of human gestures (deposit, manipulations, emptying, sealing...) in an enclosed space usually results in thousands of disconnected bones. Archaeoethanatomologists aim at identifying and dating the succession of these events as well as understanding the internal spatial organisation. A GIS-based approach particularly suits to these goals: both managing the amount of archaeoanthropological data and providing a new insight on the burial spatial dimension; yet, to incorporate temporal analyses still remains tricky. Although archaeoethanatomologists mainly used two dating process – a relative method relying on the analysis of corpses decay and absolute C14 chronology – integrating these different time-scale through GIS is challenging. Two cases will be presented: the analysis of the tomb 163d of Hierapolis (Phrygia, Asia Minor) through its whole and long-term utilisation (I<sup>st</sup>-VII<sup>th</sup> centuries A.D.) and the short sealing-episod of the collective burial of La Truie Pendue (Neolithic, France). Crossing vertical and horizontal analyses through GIS, we propose palethnologic restitution of these collective burials.

**A40.04: Space, Time and Space-Time. Where, When and How should we use them? Considerations for archaeological research questions involving spatio-temporal phenomena and the conceptual relationships between them.**

by *Keith May* (English Heritage, UK)

Spatial dimensions are perhaps the most commonly documented attributes in archaeological recording systems. When recording new layers or structures we measure height, width, depth and for archaeological features we describe shape in plan and section along with information like profile, diameter and breaks of slope.

Records of temporal information, although possibly less predominant, are still an important part of the process and perhaps even more crucial in the final analysis of results. Particularly where dates of coins, brooches, pottery and other finds are used to make temporal assertions and inferences about spatially related aspects of the archaeology.

When dividing the archaeology into various spatial units for recording purposes, the principles of stratigraphy – the "Above and Below relationship" (Harris 1979) – are commonly used as the logical 'reasoning glue' that we use to stick these different spatial and temporal phenomena back together for writing an archaeological report.

This paper will give an overview of how the CIDOC CRM ontology has been used, with specific archaeological extensions, to inter-relate spatial and temporal data and make inferences about relationships inherent in such data. It will also consider further ontological work that may be needed to enable reasoning about wholly spatio-temporal phenomena.

#### **A40.05: An ontological spatio-temporal refinement for the CIDOC CRM and GIS standards**

by Gerald Hiebel (FORTH, Greece), Martin Doerr (FORTH, Greece)

In the course of harmonizing the CIDOC CRM (ISO 21127) with the GIS world for archaeological use we have analysed epistemological processes of defining, using and determining places. This analysis lead us to the conclusion that we have to include time as an integral part in order to argue over places and what happened there. As Archaeology commits to one common reality regardless of the different opinions that exist of this reality a comprehensive concept of spacetime is necessary. To represent this one reality we introduce the phenomenal (or true) spacetime volume defined as a 4 dimensional fuzzy point set (volume) which material phenomena like events or physical things occupy in spacetime. It is regarded to be unique but not known and observable in its exact extent. This phenomenal spacetime volume can be approximated through declarative expressions which enable us to express opinions about past reality and to argue about inconsistencies and degrees of indeterminacy.

With the example of the extent of some geopolitical units in the crusader period we want to illustrate the concepts of the model and the necessity of genuinely spatio-temporal information elements.

#### **POSTERS**

##### **A40.01-P-2: Analysing the mesolithic-neolithic transition through the archaeological surface record: some methodological approaches from Tagus valley (Spain).**

by Enrique Cerrillo Cuenco (Spanish Council for Scientific Research, Spain), Jairo Naranjo Mena (Spain), Raquel Licerias Garrido (Complutense University, Spain), Mario Gutiérrez Rodríguez (Granada University, Spain)

The spatial distribution of Mesolithic and Neolithic sites is a key question in southwest Iberia, since it might trace: 1) how neolithic novelties spread through the territory, and 2) possible degrees of interaction between diverse kind of communities. Moreover, the analysis of surface evidence can supply an alternative insight to the current biased territorial distribution of sites.

During the identification of surface evidences in our fieldwork in Tagus River basin many question have arisen about the chronology of the recognised sites. Multi-temporal occupied sites or heavily disturbed (or eroded) sites can offer relevant historical information, but it can be conditioned by the ambiguous nature of surface collections. Here, an analytical spatiotemporal perception of sites gains in importance for detecting spatially restrained evidences of Mesolithic/Neolithic occupations in extensive scatters. We offer the results of several statistical tests, which have been performed on the basis of spatial correlation of artefacts.

##### **A40.02-P-2: Surface mapping with photogrammetry and GIS: the case study of the Bronze Age settlement of Codroipo (North-Eastern Italy)**

by David Vicenzutto (Università di Padova, Italy), Cristiano Putzolu (Università di Padova, Italy), Giovanni Tasca (Università di Padova, Italy)

The aim of the poster is to describe a standard mapping method we developed, for a fast 3d representation of surfaces, both in micro and macro archaeological contexts. The first step of the method is the photographic capture of interested surface, with specific overlapping standards of photographs and with some expedients taking shots. From this set of photographs we obtain a 3d surface-map, in the form of a dense point mesh. The biggest potentiality of the mapping method is in the following step: the insert of the dense point mesh in a GIS environment. A DEM is created from the mesh, through an interpolation mathematic system. The obtained surface, inserted into the GIS environment, can be integrated with characteristic *vector* patterns.

The chosen case study for the application of this mapping method is the Bronze Age settlement of Codroipo, in North-Eastern Italy. During the settlement life phases, continual rearrangements of both living areas and infrastructural features are registered. The outcomes of this complex series of rearrangements were very difficult to detect during the fieldwork. The use of a complete 3d surface mapping was then fundamental in the comprehension of the deposition dynamics of the analyzed context.

## Session A41

### “Transversal World” – Focus on the Early Middle Ages in Central Europe (ca AD 600–1050)

Saturday, 7 September 2013, 08:30–13:00

Room: UU 407 (Building 2, 4th floor)

**Organisers:** **Jana Maříková-Kubková** (Archaeological Institute of the Academy of Sciences of the Czech Republic, Czech Republic) and **Pascale Chevalier** (Blaise Pascal University, France)

The interpretation of the history of Early Medieval States forms an integral part of the cultural identity of present European nation states. Through the development of research in this field and recent political development those – over a long period built – paradigms have become subject to changes. The topic of this section is based on the needs of the project “Cradles of European Culture” (Program Culture 2007–2013), and we have to ask, whether it is possible to change our traditional view of early statehood in Central Europe and its bindings to the territory within the frontiers of the *limes romanum* and the subsequent Frankia on grounds of new findings in archaeology and history. Territory of interest are mainly the so-called dependencies according to the Treaty of Verdun from 843.

Individual contributors will be asked, whether they consider it possible on grounds of revision excavations of various sites, with the contribution of findings from a broadly conceived interdisciplinary study to re-define the basic chronology. Further topics are confined to the comparison of the formation of early settlement structures, comparison of the processes in connection with hill-forts and the so-called *incastellamenta*, possibilities of research on trade and the spread of artistic, building, and production technologies. Important is also the process of Christianisation, which is considered a basic manifestation of an entry-point into the realm of European culture.

#### **A41.01: The CARE project (Corpus Architecturae religiosae Europaeae / CARE - IV-X saec.), a new scientific tool for understanding The Early medieval Central Europe**

by **Pascale Chevalier** (Blaise Pascal University – Clermont-Ferrand 2, France)

The CARE project (Corpus Architecturae religiosae Europaeae / CARE - IV-X saec.), an international program initiated in 2002 by the IRCLAMA (Zagreb, Croatia), intends to identify Christian religious buildings in Europe between the 4<sup>th</sup> and the beginning of the 11<sup>th</sup> century; 15 countries are already involved, 6 other must join them. CARE-Central Europe is the Czech and Slovak component (extended to a lesser extent to southern Poland and to Hungary) of the program (dir. Jana Maříková-Kubková). A joint team of French informaticians and archaeologists has created in 2008-2011 the online computer database that everyone will share after various translations – an annotated database which interface is ensured by a Wiki (WikiBridge) using the new generation of Web services (semantic Web 2.0), with online inputs and queries in SARQL mode and a GIS for instant webmapping. The Corpus of textual and graphical data about each building will gradually be known on this online evolving database (<http://care.tge-adonis.fr>). Ultimately, this online scientific tool will facilitate comparisons, exchanges and discussions, and open on the Web to a very wide audience, unfamiliar parts of the European religious heritage prior to the year 1000, in particular for accounts on recent archaeological work.

#### **A41.02: The Church of St Mary the Virgin at Prague Castle and the First Christian Missions to Bohemia**

by **Jana Marikova-Kubkova** (Archaeological Institute of the Academy of Sciences of the Czech Republic, Czech Republic), **Lubos Polansky** (National Museum, Czech Republic)

The earliest chronicles equivocally inform us of prince Bořivoj having founded St Mary's church at Prague Castle – only as second church on Bohemian territory – after his return from Moravia at the end of the 9<sup>th</sup> century. An archaeological excavation led by Ivan Borkovský in the 1940s and 1950s revealed a church in the north-western part of the castle, i.e. outside the future acropolis of the castle. A recent revision of the find context and stratigraphic relations has confirmed a foundation within an older cemetery and a complicated building history already before AD 900. Therefore, we must ask whether we should not take into account a significant older Christian stratum.

The information on the Bohemian milieu and its evangelisation by contemporary written sources is scarce and fragmentary. However complex the current view based on unreserved acceptance of information from accounts of the 2<sup>nd</sup> half of the 10<sup>th</sup> century may seem, it is neither consistent nor the only possible one. A reinterpretation of the archaeological findings and a more critical approach to the written records allow us to propose a new concept of the history of Bohemia in the 9<sup>th</sup> century.

#### **A41.03: Archeological evidence of the earliest phases of the St. George's Basilica in the historical context of the religious practices in the 10th century at the Prague Castle**

by **Katarína Chludíková** (*Institute of Archaeology of the Academy of Sciences of the Czech Republic, Czech Republic*)

Interpretation of written sources from the earliest history of Bohemian state has led to the appearance of various contradictory hypotheses regarding the relics of earlier phases of the St. George's Basilica (the second church built at the Prague Castle). Historians dealt with this building already in the 18<sup>th</sup> century. At the turn of the 19<sup>th</sup> and 20<sup>th</sup> century, the Basilica was unearthed and "puristically" reconstructed. Finally, extensive archeological research was realized in early 1960s.

Early medieval written sources mentioned the Basilica as the third oldest Christian church in Bohemia. These references have provoked various different contradictory chronological hypotheses regarding the preserved masonry. Earlier art historical expert examinations of the above-ground parts of the church often reflected the subterranean constructions only incompetently, amateurishly and vice versa for archeologists and the above-ground constructions. The current analysis seeks to propose a reviewed evidence of the earliest phases of the Basilica (built prior to 921 – crucial reconstruction after 1142). Interdisciplinary approach, objective criticism and "reading" of the relics will enable rethinking of earlier statements. Re-interpretation of the relics will also proceed from the liturgical practices, understanding the written sources and defining all possible architectural models.

#### **A41.04: The first stone churches in Slovakia and their function in urban structure**

by **Peter Baxa** (*The Monuments Board of the Slovak republic, Slovak Republic*), **Peter Bistak** (*The Monuments Board of the Slovak republic, Slovak Republic*), **Zuzana Borzova** (*Constantine the Philosopher University, Slovak Republic*)

In Slovakia, in consequence of traditional view on historical evolvement in the 9th century and significance of so-called Great Moravia for the Slovak history, an exploration of importance of the Carolingian empire on cultural and political orientation of then social elite, has been kept in the background.

The Church of St. Margaret in Kopčany built on the border of older urban area on access road to fortified settlement in Mikulčice, which is a result of controlled urbanisation of this social elite settlement around the year 850. An attempt to synchronize the Kopčany area with a development of a built-up area of Mikulčice in the 9<sup>th</sup> century.

Overlooked interpretation of architectural origin of the Church of St. Emmeram regarded as proprietary church of Prince Pribina consecrated in 828 in Nitra. Tradition and reality resulted from the revision of recent archaeological research of Nitra Castle.

Searching for the background of the Church of St. George in Kostoľany pod Tribečom and its role in Kostoľany valley resulted from the archaeological revision excavations in 2005 – 2012.

#### **A41.05: "Emma regina": From Francia to Bohemia, a princess as a power issue**

by **Arlette Maquet** (*Université d'Auvergne, France*)

This paper intends to show the role played in Central Europe by Emma of Burgundy (or Italy), at first Queen of West Francia (965-987) then Duchess of Bohemia (+ 1006). She is a political issue for the Ottonian dynasty where her mother Empress Adelheide plays a major role. Facing multiple resistances both in Francia and in Bohemia, she, however, shows qualities that enable her, in a world dominated by men, not only to survive but also to influence widely the way of life in Bohemia around the 1000's AD.

#### **A41.06: Gradišče above Bašelj: an overview of the Slovenian site, presented in the project Cradles of European Culture**

by **Špela Karo** (*Institute for the Protection of Cultural Heritage, Slovenia*), **Timotej Knific** (*National Museum of Slovenia, Slovenia*)

Gradišče above Bašelj designates a steep elevation rising up 873 metres above the sea level, at the foothills of the mountain Storžič. Uneven surface of the archaeological site indicates the outlines of the structures below. The first excavations carried out in 1939 have revealed a stone wall surrounding the settlement. The excavations carried out by the National Museum of Slovenia in 1998 have confirmed existence of the settlement from the 5<sup>th</sup>–6<sup>th</sup> century and uncovered another layer with numerous iron objects and ceramic fragments, from the period between the end of the 8<sup>th</sup> century and the beginning of the 10<sup>th</sup> century. Recently, a lidar scanning of the site and its surroundings was



carried out, confirming numerous structures inside the settlement, and placing the site within the cultural landscape.

The research has proven the great importance of the site, which can be recognized in several aspects. One of them is an abundance and richness of finds, including pottery, glass finds and numerous objects made from quality iron. Moreover, an exclusive value can be recognized in the fact that settlements from the Early Middle Ages with such exquisite finds are scarce not only in Slovenia, but also in the wider European context.

#### **A41.07: Kvarner archipelago (Croatia) between the Byzantine rulers, Slavic expansion and Frankish pretensions**

by **Morana Čaušević-Bully** (aIPAK, Croatia)

The Kvarner region, comprised between the Istrian peninsula to the West and the Dalmatian coast to the East, with its particular position between three different powers, both old and emerging, is one of those regions that could provide elements for the fuller understanding of the genesis of its specific Early Medieval culture.

The historical situation from the 6<sup>th</sup> to the 9<sup>th</sup> century is that of an insular world governed by the Byzantine rulers, while the thin coastline that faces the multiple islands is peopled by the first Slavic – Croatian – groups from the 8<sup>th</sup> century onward.

The material culture, combined with the humanized insular landscape, however, provides us with a slightly different picture. While the byzantine influence is barely detectable, the region exhibits a remarkable continuity of its previous, late-antique phase during the period from the 6<sup>th</sup> to the last quarter of the 8<sup>th</sup> century. From that moment onwards, the Frankish rule in the neighboring Istrian peninsula and the Slavic presence, were the factors that initiated and influenced the most the transformation of this profoundly antique culture during the 8<sup>th</sup> and the 9<sup>th</sup> centuries.

#### **A41.08: The ruralisation and process of christianisation of urban structures in the territory of central Balkans in the period of late antiquity and early middle ages**

by **Olivera Ilic** (Institute of Archaeology SANU, Serbia)

The paper deals with the history and transformation of the Roman cities in the provinces of central Balkans in the final epoch of society in the antiquity, starting with Constantine the Great to the early decades of the 7th century, or beginning of permanent settlement of Slavs on the Balkans.

We are familiar with the process of disintegration and ruralisation of the cities of the Roman provinces of Central Balkans not only from written sources, but we also find its reverberations in the archaeological traces. Thanks to archaeological excavations performed at several sites in Serbia (Sirmium, Viminacium, Romuliana, Naissus, Remesiana, Lustiniana Prima) archaeologists were able to identify disintegration processes of urban structures that took place in the antiquity.

The pressure of the barbarians (especially on the Danube limes), rapid decline of the military, political and economic strength of the Roman Empire, as well as fundamental demographic changes starting already from the end of the 4th century AD, will alter forever the former picture of peace and serenity. From that point on, the Roman city with its monumental buildings will be no more than ruins onto whose partially preserved walls the improvised settlements of some new world rising from the ashes of antiquity will lean.

#### **A41.09: Lead in Early Medieval Bohemia. Unexpected archaeological evidence**

by **Jan Mařík** (Institute of Archaeology of the ASCR, Prague, v. v. i., Czech Republic), **Petr Hejhal** (ARCHAIA Brno o.p.s., Czech Republic), **Radek Bláha** (Museum of Eastern Bohemia in Hradec Králové, Czech Republic)

Massive expansion of metal detectors and their usage in the Czech Republic at the beginning of 1990s had brought a series of unexpected discoveries that subsequently disproved well-established methodological approaches and generally accepted hypotheses. Eventhough finds of exceptional quality (coins, jewellery pieces etc.) attracted the attention first, gradually, the scholars have concentrated on several thousands of lead casts-off and fragments obtained during systematic non-destructive surveys conducted on several Early Medieval sites. Initial hesitation regarding their Early Medieval dating that had been disproved for certain was subsequently replaced by questions concerning their interpretation.

Research in Early Medieval lead finds in Bohemia is currently still at its very beginning and, thus, only working hypotheses will be presented in this paper based on archaeological circumstances, position of the sites with the settlement structure, and chemical analyses. The presented interpretative models deal mainly with the issues of production and processing of non-ferrous metals and with consecutive trade.

#### **A41.10: Myth of the Old Hungarian Saddle**

by Vaclav Gresak (Tomas Bata University in Zlin, Faculty of technology, Czech Republic), Martina Cernekova (Tomas Bata University in Zlin, Faculty of technology, Czech Republic), Petr Hlavacek (Tomas Bata University in Zlin, Faculty of technology, Czech Republic), Ondrej Bilek (Tomas Bata University in Zlin, Faculty of technology, Czech Republic)

The presented work illustrates the history and origin of the equestrian saddle as used by the Hungarian tribes during the time of the Hungarian Conquest of the Carpathian Basin. In the introduction of this document there are analyses of archaeological find from tomb complexes on the land now occupied by modern-day Hungary which define the type of riding saddles used by the ancient Magyars. Reconstructions of bone ornaments on equestrian saddles from Soltszentimre were conducted based upon findings from biomechanics and reverse engineering. It was shown that Old Hungarian saddles are akin to saddles of a Hunno-Turkish construction — a wooden saddle tree with wide saddle bars. This type of saddle was used up until the end of the first millennium throughout the whole of Eurasia. Further development of equestrian saddles on the land of modern-day Hungary was the result of new, imported technologies. More modern-type saddles — having narrow saddle bars and a seat strap, which became the basis for Hungarian folk saddles — appear no earlier than the 11th century.

The result of the archaeological experiment conducted is the fabrication of a working replica of an Old Hungarian saddle decorated with bone ornaments as per the findings from Soltszentimre.

#### **POSTERS**

##### **A41.01-P-3: New approach to the chronology of Carolingian influences on the Moravian Slavs culture in the 1st half of 9th century.**

by Zbigniew Robak (Slovak Academy of Sciences, Slovak Republic)

Was the “magic” date 833 in fact a fundamental turning point in the history of the so called Great Moravian State? How does this period look like in the light of both archaeological and written sources? Can we still speak of the so called Blatnica-Mikulcice Period or Horizon? How did the end of the crisis and the division of the Empire in 843 affected relations between the Moravians and the Eastern Carolingian State? The author proposes a new approach to the periodization of the material culture of the Slavs living in the Moravia and the western Slovakia within the context of West-European cultural influences. The author, based on an analysis of a series of relics associated with the elite culture, using written sources, analyses the process of diffusion of the Carolingian culture into these areas and its reception, as well as the development of relations with the Carolingian State in the first half of the 9<sup>th</sup> century.

##### **A41.02-P-3: Publications on medieval studies of Institute for Archeology at Charles University**

by Ivo Stefan (Charles University, Faculty of Arts, Czech Republic)

The poster will present the publications on medieval studies of Institute for Archeology at Charles University (journal *Studia mediaevalia Pragensia* and individual books).

##### **A41.03-P-3: Stt Peter and Paul Rotunda at Budeč Stronghold: evidence and interpretation of cultural, structural and religious traditions of Pre-Romanesque Christian architecture in Central Europe**

by Pavla Tomanova (Archaeological Institute of the Academy of Sciences of the Czech Republic, Czech Republic)

Stt Peter and Paul Rotunda at Budeč Stronghold, being built around the turn of 9th/10th centuries, represents the oldest Christian architecture in Bohemia preserved in its original masonry up to the present days. Thus, it provided the basis for scientific discussion on the provenance of the architectural traditions of Pre-Romanesque rotundas in Bohemia that was held in the last century. The subject of that discussion has a particular potential for research on the past “European integration” illustrating Early Medieval cultural streams and communication network; as well as might it bring some light to the process of European Christianisation. The previous discussion was however affected by the contemporary informational basis and also by historical paradigms and public orders.

In my research, I am going to access the topic with an alternative approach, preliminary based on a critical assessment of the above described discussion and on a complex revision of the previous archaeological and structural surveys of the Stt Peter and Paul rotunda. Then, I will set the Bohemian rotundas in a broader European context focusing on particular elements, as their social environments and settlement contexts. At the EAA meeting in Pilsen, I would like to present the actual results of my research and discuss the possible ways for further investigation.

## Session A42

### Unexplained archaeological off-site features

**Saturday, 7 September 2013, 08:30–13:00**

**Room:** EU 106 (Building 1, ground floor)

**Organisers:** **Vincent Riquier** (INRAP, France) and **Eileen Eckmeier** (University of Bonn, Germany)

Man-made structures that occur outside of archaeological settlement areas are usually grouped under the term off-site features. They are, in many cases, also chronologically disconnected from other archaeological features. Most of these features are pits which do not contain any artifacts or other anthropogenic relics that could be used to date or characterize them. Therefore, their function remains unexplained. Among these unexplained features are the so-called "Schlitzgruben" or "Slot pits", which appear in several European regions. The combination of archaeological and pedological methods can help to reveal functional aspects of those pits. Additionally, the analysis of the ancient topsoil material preserved in the pits potentially allows for environmental or land-use reconstructions. We would like to invite archaeologists to share their experiences and hypotheses about these unexplained pits and other off-site features. Also studies related to environmental and geoarchaeological issues are welcome.

#### **A42.01: Animal trap – provision pit – land mark?**

by **Susanne Friederich** (*Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt, Germany*)

Best soils with thick black earth deposits characterize central Germany with the Magdeburger Börde, Mittelbe-Saale region and Osttharvorland. Best site criteria for a farming lifestyle can be found throughout the whole area. This explains the archaeological map: site next to site. Surprisingly, huge areas within the fertile soil substrates are archaeologically almost sterile – solitary pits situated far away from any settlement. Was this just agricultural land? Were "slot-pits" used as traps for damage causing deer? Did even "pit circles" – reminiscent of Seahenge – function as animal traps? Or do we capture with those kettleshaped pits within areas devoid of features a 'field-refrigerator'?

The total absence of finds is the connecting link to the by now often recognized but seldom appreciated "slot-pits". Mirrored by further sites – also far beyond central Germany – both types of features will be presented.

#### **A42.02: Badly defined Neolithic pits. New results from archaeopedological, micromorphological and phytolith work in Northern France**

by **Kai Fechner** (INRAP, France), **Julia Wattez** (INRAP, France), **Alexandre Chevalier** (Institut royal des sciences naturelles de Belgique, Belgium), **Frédéric Broes** (INRAP, France)

In recent years, a number of articles and reports have been published on natural sciences applied to the study of "Schlitzgruben" and other badly defined types of neolithic pits of Northern France and Belgium. Two new developments are proposed: the treatment of these "environmental" data by a GIS and new pedological, micro-morphological and phytolith studies in mostly non-carbonated soil contexts. These have been compared with former results that were mostly associated to carbonated soil contexts. Taking this taphonomic difference into account, some interesting similarities and dissimilarities between pits allow to better define the contexts in which they have functioned and to prepare a layout for an experimental approach.

#### **A42.03: « Schlitzgruben » in Alsace, France: Overview, datation and coming studies**

by **Damien Ertlen** (Université de Strasbourg, France), **Clément Feliu** (INRAP, France), **Matthieu Michler** (INRAP, France), **Yohann Thomas** (INRAP, France), **Cécile Veber** (INRAP, France), **Delphine Minni** (INRAP, France), **François Schneikert** (PAIR, France), **Nathalie Schneider** (INRAP, France)

Schlitzgruben are usually described as deep and narrow pits. They can also be called "slot-pit" in English or "Fente" in French. They are found all around Europe and are especially well represented and easy to recognize in loess sediment. Their spatial organization is difficult to describe because they are often found off-site or outside of a chronological frame. As a common feature they contain no or very few artefacts. That is why their possible functions and construction remain unexplained and their datation unclear or unexplored.

The construction of a new high speed train track between Paris and Strasbourg brought us the opportunity to excavate a wide transect across the Kochersberg loess region (Alsace, France). A large set of Schlitzgruben was excavated. Pit shapes, sediment analyses, palaeoecological and archaeozoological data were recorded to produce a first synthesis.

Radiocarbon datations were obtained from various materials (bones, charcoal, soil organic matter). We would like to report and exchange results of this regional synthesis in order to further discuss the functions of these pits and to consider a wider scale of study (transnational, European).

#### **A42.04: Schlitzgruben, fosses à profil en Y-V : a clue in the understanding of the exploitation territory in Protohistoric Europe**

by ***Nathalie Achard-Corompt*** (INRAP, France), ***Vincent Riquier*** (INRAP, France), ***Ginette Auxiette*** (INRAP, France), ***Cyril Marcigny*** (INRAP, France), ***Jan Vanmoerkerke*** (Service Regional de l'Archéologie Champagne, France)

Schlitzgruben are known since the beginning of the 20<sup>th</sup> century in central Europe, but thanks to the development of preventive archeology and new information technologies we realized that it was a much larger phenomenon.

Characterized by an elongated plan, they are V-, Y-, W-shaped and up to 3 m deep. As the filling is lacking any artefacts, radiocarbon dates have been conducted and showed that the pits were used between 4600 and 700 BC. These analyses were managed within the framework of an INRAP research project in Champagne-Ardenne where hundreds of pits have been identified. This led in 2010 to a round table bringing together about sixty European archaeologists. Many functions were proposed (tanning, retting, hunting, production of vegetal tar, food storage, ritual and religious practices) and discussed during this meeting, but the hypothesis of trap pits for large wild herbivores seems actually to be the best argued.

#### **A42.05: 'Schlitzgruben' from Polish territory – new data and interpretations**

by ***Karol Dziegielewski*** (Jagiellonian University, Poland)

New large-scale excavations carried out in Poland have yielded numerous examples of hollowed structures which are long and rectangular in shape, narrow and wedge-like in section. Some of them reveal traces of wooden or wattle construction in bottom parts. They usually contain few artefacts. Most of them were found in the vicinities of Cracow. One of such pits, from the Early Iron Age settlement in Brońsko (Greater Poland) contained a bundle of flax stems at the bottom. The author discusses the possibility that the features in question, very similar to *Schlitzgruben* ('slot-pits'), commonly occurring in Neolithic settlements across Europe, should be associated with flax processing, namely with retting. Several circumstances seem to support this hypothesis: the pits in question are usually clustered at the settlements' peripheries, their bottoms are below the past groundwater level, their narrow walls might enable flax bundles to stay vertically, in order to facilitate retting. Many construction details of some modern flax-retting pits are present also in discussed structures (e.g. wattle walls). However, records from Polish territory show that there existed some constructional and metrical differences between Neolithic and later (Bronze/Iron age) features. For that reason functional interpretation of both groups of objects may vary.

#### **A42.06: Windthrow – trace of human or nature activity**

by ***Robert Zukowski*** (Institute of Archaeology and Ethnology PAN, Poland), ***Pawel Gan*** (Institute of Archaeology and Ethnology PAN, Poland)

A wide range of archaeological works performed on the occasion of major road investments made it possible to separate the specific type of pits which can not be easily interpreted. These objects are often of considerable size and depth characterized by a three-part design in the vertical section, in plan view their shape is similar to the oval. In the central part there is a layer-like natural soil. A number of objects and artifacts found inside may be different. The composition of separate layers and their internal structure with precise stratigraphic analyses of those objects, allow us to recognize such structures as remains of tree-falls – windthrow. While in the author's opinion such interpretation of above described objects is correct and most of them were created by natural factors, it does not exclude a possibility of their creation and exploitation by man including temporary settlement. A series of laboratory test was applied in order to confirm such interpretation. The present paper will discuss both the issue of identification and interpretation of these objects as well as the effectiveness of applied research methods.

#### **A42.07: Geoarchaeological investigations of Schlitzgruben and other off-site features in Germany**

by **Eileen Eckmeier** (University of Bonn, Germany), **Susanne Friederich** (Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt, Germany), **Renate Gerlach** (LVR, Germany)

The characteristic shape of V-shaped pits, or Schlitzgruben, their location and the lack of archaeological artefacts in their fillings led to several hypotheses concerning their function and setting. The analysis of soil material which was preserved in archaeological pits can deliver geochemical information about the environmental conditions and anthropogenic activities at the time the pit was filled, even though macroscopic artefacts are missing.

We will present results from geochemical and geoarchaeological investigations of several fields of Schlitzgruben that have been documented and sampled at excavations in the loess region of Saxony-Anhalt and in the Rhineland area (Germany). Previous analyses of Schlitzgruben in the Rhineland area showed that the geochemical characteristics of their fillings are different from other off-site pits and from settlement pits, they display a mixed signal. The elevated phosphate concentrations are comparable to the amounts measured in pit-fillings sampled at Neolithic settlements, while the amounts of organic matter and charred organic matter were comparable to other artefact-free off-site features. These findings implied that the filling material of Schlitzgruben might have been altered by agricultural activities, and they indicate an especially high input of degraded organic matter.

## Session A43

### The use and perception of caves and rock shelters in Early Medieval Europe (400–1200 AD)

Thursday, 5 September 2013, 16:30–18:30

Room: UU 108 (Building 2, ground floor)

**Organisers:** **Knut Andreas Bergsvik** (University of Bergen, Norway) and **Marion Dowd** (School of Science, I. T. Sligo, Ireland)

Caves and rock shelters in Europe have traditionally been associated with prehistory, and in some regions cave archaeology has become synonymous with the Palaeolithic. However, there is abundant evidence that caves and rock shelters were important foci of activity in historic times. During the Early Medieval period (c. 400–1200 AD) caves were used for short-term shelter, habitation (sometimes associated with particular activities such as hunting or fishing), specialised craft activities (eg. metalworking), storage, as hideaways and for tending animals. Caves at this time were also used for religious purposes – for instance, as places of spiritual retreat or pilgrimage, and as funerary sites.

In this session we want to focus on this neglected field of research. Several questions can be raised: what can be elucidated of those who utilised caves in terms of social status, ethnicity, economy or gender? How caves were perceived is likely to have differed between local populations versus immigrants. How did such differences manifest? Is there a correlation between cave morphology/location and specific usages? Did the use of caves/rock shelters change over time, and how did these changes relate to social, economic, or religious changes within society? Papers addressing one or all of these issues are welcome. Information from manuscript sources and historical documentation provide valuable insights into the archaeological data. For this reason, we believe that colleagues from related disciplines have an important contribution to make to the discussion and session.

The use of caves and rock shelters is a pan-European phenomenon. Archaeologists in almost all regions and countries work with caves and face many of the same challenges. We believe that it is important to bring these archaeologists together to exchange results and ideas, as well as to discuss theoretical and methodical approaches, in this instance focusing specifically on the period 400–1200 AD.

#### **A43.01: Into the Heart of Darkness: Changing Perceptions and Uses of Surtshellir Cave in Medieval and Post-Medieval Iceland**

by **Kevin Smith** (Brown University, USA), **Guðmundur Ólafsson** (National Museum of Iceland, Iceland)

Surtshellir, one of the world's longest lava caves, lies on the edge of western Iceland's inhabitable fringe. Its archaeological record includes a massive subterranean wall, a Viking Age structure, and animal bones representing the slaughtered and mutilated remains of several hundred domestic animals. AMS dating places these features at the very start of Iceland's occupation. After this, the cave appears to have been avoided until the 18th century. The cave itself was named for Surtur, the being Iceland's Viking Age settlers believed would bring about the world's destruction. Medieval documents and post-medieval traditions variously associated the cave with rituals to appease Surtur's wrath, outlaws threatening to disrupt regional political order, violent encounters among elites during Iceland's state-formation process, or ghosts and malevolent spirits. Archaeological and ethnohistoric sources provide complementary information on changing perceptions of the site's use and role within its physical landscape, Norse cosmology, and Icelandic society through nearly a millennium. These transformations – emerging from an enigmatic Viking Age reality – were memorialized and reinscribed differently into regional and national narratives that were transformed as Icelandic society and culture, itself, changed. In turn, these reinterpretations appear to have affected the ways in which the cave was used...avoided...or dreaded.

#### **A43.02: Early Medieval Caves and Rockshelters at the west coast of Norway**

by **Knut Andreas Bergsvik** (University of Bergen, Norway), **Anne Haug** (University of Trondheim NTNU, Norway)

This paper presents an overview of the surveyed and excavated caves and rockshelters that were occupied during Migration period, the Merovingian period and the Viking period (c. 400–1030) along the western coast of Norway from Nordland in the north to Rogaland in the south. Although there are regional differences, the overview shows that caves and rockshelters were intensively used as residential sites as well as ritual sites during the Migration period whereas relatively few of these places were occupied and used during the Merovingian and the Viking periods. The change, which takes place around 550–600 BC can probably be related to general social and economic changes in Scandinavia around this time, when power became more centralized and the utilization the land was reorganized. During this

process, agriculturally marginal areas – in which most of the caves and rockshelters were situated – became more important in the overall economy. This led to the establishment of built architecture which to a large degree replaced the natural shelters.

**A43.03: Hidden in the depths, far from the people. The funerary context of the Lower Gallery of La Garma and the use of natural caves as burial places in early medieval Cantabria (northern Spain)**

by **Pablo Arias Cabal** (*Universidad de Cantabria, Spain*), **Roberto Ontañón Peredo** (*Gobierno de Cantabria, Spain*), **Enrique Gutiérrez Cuenca** (*Proyecto Mauranus, Spain*), **José Ángel Hierro Gárate** (*Proyecto Mauranus, Spain*)

The discovery in 1995 of the remains of five young men dating to the early Middle Ages (7th–8th centuries AD) in the Lower Gallery of La Garma, a place which is only accessible after descending two shafts, 8 and 15 meters deep, provided solid archaeological evidence on the burial use of some natural caves of Cantabria (northern Spain) during the late Visigothic period. Recent excavation of some similar contexts, such as Portillo del Arenal, Las Penas or Riocueva, together with the reanalysis of some formerly known sites, is disclosing a new, apparently heterodox, funerary behaviour in early Medieval times. Moreover, it also includes some other intriguing features, such as the systematic crushing of the skulls of the dead, or the association to the bodies of burned grain. Yet further analysis shows that this kind of funerary context is not restricted to Cantabria. Evidence of these atypical burials can be found in other areas of the Iberian Peninsula and also in other parts of SW Europe. This paper tries to address the causes of such an unusual funerary behaviour. Why were the bodies of some persons hidden in remote areas of natural caves, instead of being buried in ordinary cemeteries? Some hypotheses and further research are proposed.

**A43.04: Use of caves and transformation of the rural settlement patterns in the Iberian peninsula between Late Antiquity and the Early Middle Ages**

by **Manel Feijó** (*Universidad de Zaragoza, Spain*)

The human occupation of caves has been an object of an important methodological and theoretical review in later years. The former Roman *Hispania* shows a wide and varied outlook of human occupation of caves throughout Late Antiquity and the Early Middle Ages with different functionality, which is not always easy to distinguish from the current condition of the preserved structures and the material culture found in them.

Moreover, we should bear in mind that in these territories two different cultures (Christian and Muslim) were found in this period, each with its own and particular expressions on domestic typologies and devotional or ascetic rites.

The aim of this contribution is to tackle this subject in the general panorama of the Iberian Peninsula, considering the evidences that allow us to establish the different use and belonging of these settlements. This will be done without limiting to the cave spaces alone, but setting them in the context of the diverse transformations, especially in relation to rural settlements and their patterns of change, that took place during Late Antiquity and the Early Middle Ages in the European territories. This is a new approach that could provide new strategies and possibilities for the study of this subject.

**A43.05: The use of caves and rockshelters in mediaeval Poland**

by **Michał Wojenka** (*Jagiellonian University, Poland*)

The paper is an introduction to the issues of medieval materials from the caves localized in Poland. Due to the state of research, the most valuable data are from cave sites in the Jurassic Kraków-Częstochowa Upland. The oldest material is dated to the Middle Age and are represented by single finds of pottery sherds from the 9th–10th centuries. Other material from the caves are dated to the earlier phases of the Early Middle Ages (11th–13th centuries). The most interesting find from this period is undoubtedly the silver hoard deposited in a clay vessel and hidden in Okopy Wielka Dolna Cave in Ojcow at the end of 11th century. The late medieval phase of the use of caves (2nd half of the 13th – beginning of the 16th centuries) is represented by the fragments of clay and metal artefacts. Some of them can be dated to the latter half of the 13th – the first half of the 14th centuries. It is assumed that the caves of the Kraków-Częstochowa Upland served mainly the function of providing shelter for people living in situated nearby village settlements. Unearthed military artefacts can hypothetically reflect the fights between Poland and Czech that occurred in this region in the beginning of the 14th century.

#### **A43.06: Significance of natural and artificial caves and rock shelters in Early Medieval Lower Austria**

by **Alf Krauliz** (CINDIS – Center of Interdisciplinary Studies, Austria), **Henry Dosedla** (CINDIS – Center of Interdisciplinary Studies, Austria)

Regarding the historical landscape of Lower Austria there are several cases of caves and rock shelters which were used in various ways – profane as well as ritual – from prehistory until medieval times. As a striking fact within the same landscape there is an abundance of artificial subterranean caves and tunnel systems, all sharing similar features which gave rise to a number of questions and hypotheses concerning their possible origin or practical purpose since the earliest stages of archaeological research in these regions. Since the recent discovery and investigation of more sites of that kind evidence could be achieved that the great number of these artificial cavities was owed to a distinct ritual use and the consequent necessity of creating some convenient substitute in places due to geological conditions apparently are lacking any natural caves or rock shelters.



## Session A44

### What Is Changing and When – Post-LBK Life in Central Europe

**Saturday, 7 September 2013, 08:30–13:00**

**Room:** UU 108 (Building 2, ground floor)

**Organisers:** Harald Stäuble (Landesamt für Archäologie, Germany), Jaroslav Řídký (Archeologický ústav AV ČR, Czech Republic) and Petr Květina (Archeologický ústav AV ČR, Czech Republic)

In the first half of the fifth millennium B.C., about five hundred years after farming was introduced, it is generally presumed that Central Europe was undergoing a change, which some see as a fundamental one, others see it as a continuous development. Within the geographical area of Linear Pottery Culture (LBK) distribution, so far quite homogeneous in its material and structural finds, the cultural markers seem to split up into individual regions.

Despite this view of diversification and the increasing heterogeneity of Post-LBK cultures, it is possible to trace some common and unifying phenomena. Among the most notable one must mention the circular ditch enclosures (rondels). Their ground-plan was quite standardized not regarding boundaries of different archaeological cultures of that time.

The aim of the session is to ask if the cultural change from LBK to SBK as well as the development during Post-LBK period is a slow continuous process, which might reflect an immanent cultural development or whether cultural change was sudden, mainly caused by influences from outside. On the other hand we like to confront general trends with regionally different processes within the Post-LBK period.

This will be done in three thematic blocs:

1. Theoretical aspects of culture change from LBK to Post-LBK: fact or artefact, local or general, slow or fast.
2. Intra-site patterns and social complexity within Post-LBK: spatial distribution and relation of settlement structures.
3. Long-distance contact and exchange during Post-LBK: ceramic imports, mining and distribution of stone implements.

We expect to map the present state of knowledge which is meant to go beyond basic questions regarding chronological problems. We aim for a broader interpretation of a larger geographical area. Key presentations will be selected for the section. Others will be asked to give a short presentation of a poster.

#### **A44.01: Culture, change, identity. Defining them, defining us.**

by Alexander Gramsch (Museum Herxheim, Germany)

This paper is supposed to give a general introduction to the session, presenting concepts and approaches to define cultures, archaeological cultures, and culture change. The paper will move from a short history of archaeological thought concerning culture change to recent reconsiderations of culture as process. In the end, thinking about historical change – ‘fact or artefact’ – also means thinking about us. Key concepts that need to be considered are essentialism and hybridity, ‘prime movers’ and process, identity and practice. Reference will be made to the Western LBK and in particular to the body ritual practiced at the LBK site Herxheim (Germany).

#### **A44.02: The Early to Middle Neolithic transition in western Central Europe**

by Detlef Gronenborn (Roemisch-Germanisches Zentralmuseum, Germany), Christian Lohr (Roemisch-Germanisches Zentralmuseum, Germany)

Towards its final centuries the Early Neolithic Linear Pottery culture (LBK) in western Central Europe undergoes a cycle of a massive population increase after which populations decline rapidly and societies at least partially transform into the early Middle Neolithic Hinkelstein group. This transition phase of about 250 years is characterized by sometimes exceptional outbursts of violence, ritual intensification, possible changes in belief systems, but also changes in settlement systems and possibly land-use. Under the influence of cultural impulses from the south, the Paris Basin takes on a new and expanding dynamic. Furthermore, this whole period is embedded in a climatic transition of hemispheric dimension.

#### **A44.03: New ideas in old villages – Interpreting the genesis of the Stroked Pottery Culture**

by Thomas Link (University of Wuerzburg, Germany)

The transition from the Linear Pottery Culture (LBK) to the Stroked Pottery Culture (StK) seems to be a profound disruption. However, it does not come along with a comparable discontinuity of settlement structures. The settlement of Dresden-Prohlis shows that continuity may be supposed even on household level. Also most attributes of the novel

style are already present during the younger phase of the LBK. Nevertheless, the ornamental spectrum dramatically decreases, which is why the genesis of the StK must first and foremost be understood as a process of stylistic canonisation.

Several culture-historical questions arise: Where does StK evolve? How do the innovations spread? Does stylistic change correlate with economic or social change?

The abandonment of the “traditional” style may be interpreted as symbolic expression of a new cultural identity. This, however, does not imply a profound socio-cultural break, but rather reflects an ideological reorientation within the persistent social and economic framework. As an explanation for the rapid spread of the StK a polyfocal model is suggested, which supposes parallel synchronous evolution of separate but interacting regions.

Finally, from an eastern perspective, the often-cited “crisis at the end of the LBK” has to be relativized and regionally differentiated.

#### **A44.04: Old School's not Dead. The People with Stroked Pottery in Moravia.**

by František Trampota (*Regional Museum Mikulov, Czech Republic*)

Central European archaeology is slowly leaving the culture historical way of perception of archaeological cultures. Prehistoric cultures are now often understood only basically as decorative and morphological styles. However anything should be taken automatically. My aim is to discuss the presence of the Stroked Pottery Culture (SBK) in Moravia and propose the idea that the pottery decoration may sometimes refer to a specific social group. The discussion will rely on settlement structures and data from quantification of distribution of raw materials for chipped and polished stone industries. Certain attention will be dedicated to relative chronology as well.

#### **A44.05: The Transition to Post-LBK in Northwestern Bavaria – An Innovation Model**

by Stefan Suhrbier (*Freie Universitaet Berlin, Germany*)

The transition from LBK to Post-LBK in Northwestern Bavaria is characterized by the absence of pottery styles which are connected to the latter period. The Post-LBK pottery decoration was obviously not invented by the population of this area but adopted as a kind of innovation coming from the Rhine-area.

On the basis of regional examples the transition from LBK to Post-LBK is hypothesized – based on the innovation model published by Eisenhauer (2002). As the analysis of pottery styles in Northwestern Bavaria shows, this innovation model – originally developed by Rogers and Shoemaker – can be extended. In addition to the adoption of an innovation, the failure of an alternative can be modelled.

In general we have to ask, whether pottery styles have to be interpreted as indicators for innovation or as autonomous “design innovation”.

#### **A44.06: 450 post LBK years in Southern Bavaria**

by Karin Riedhammer (*University of Bern – Institute of Archeology, Switzerland*)

Southern Bavaria in post LBK times is a small area between two big cultural regions: In the west Hinkelstein-Großgartach-Rössen; In the east the Stroked Pottery region. It took a lot of impact from both regions, finding its own way, what we call today “Südbayerisches Mittelneolithikum” (SOB). An evident transitional stage from LBK to SOB still is missing. By carrying on general LBK traditions, the SOB starts with a sudden reduction of pottery decoration.

In **SOB I** it belongs to the European Stroked Pottery style, close to Bohemian StK II and III, with a few “special Bavarian” decoration aspects.

In **SOB II** the first “Bavarian” pottery style emerges. The settlement area spreads out into other regions: Plzen Basin, the Basin of Linz (Upper Austria) and towards Southwest Germany. A lot of cultural contact sure is focused on the Bavarian chert and the SOB region transfers influence from the Lengyel region to Southwest Germany.

In **SOB III** things are going to get mixed up. A continuous change towards Münchshöfen begins.

During 450 years the SOB undergoes a continuous development that, at the end, shows a fundamental change in all aspects of an archeological culture preparing the following Copper Age.

#### **A44.07: Social dimensions of a Lengyel Culture settlement in Svodín (Slovakia).**

by **Peter Demján** (*Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic*)

The undergoing archaeometric analysis of settlement burials (project APVV-0598-10) and complex processing of archaeological material from large-scale excavations of the polycultural site Svodín-Busahegy (project VEGA 1/0924/12) provide new evidence about chronological, spatial and social relations within the Lengyel Culture settlement. The site offers a unique possibility to study the relationship of habitation, burial and ritual areas, supported by new <sup>14</sup>C data and typological evaluation of grave inventories from the area of the houses and of the circular ditch enclosures forming part of the settlement. The existence of different social statuses is reflected by the variability in burial rite and connection of special grave goods with different age and gender groups. The diachronic development and spatial clustering of exceptional burials in certain habitation areas point to a more pronounced social stratification of the Post-LBK society.

#### **A44.08: Neolithic longhouse seen as a witness of cultural change in post-LBK**

by **Markéta Končelová** (*Institute of Archeology of Academy of Sciences of the Czech republic, Czech Republic*), **Petr Květina** (*Institute of Archeology of Academy of Sciences of the Czech republic, Czech Republic*)

The aim of the paper is to present the unique post-LBK plans formed by the foundation trenches which are exceeding the common range of the Neolithic settlement situation in Bohemia. Their archeological context will be presented as well. It is beyond doubt that the nature of the standard context of post-LBK turns in almost all its expressions. Beside the most visible change in the style of pottery decoration there are two other important indicators of general changes in the Neolithic society. The first ones are the monumental circle enclosures – rondels and the second ones are post-LBK longhouses. The case of the site Kolín includes either of them and thus allows studying the development of the transformations in time at the same area. There is remarkable occurrence of the several stages of the development of the Neolithic houses varying in the typology of the plans.

#### **A44.09: Aspects of change in the bandceramic settlement area of Eythra, distr. Leipzig, Saxony**

by **Maria Cladders** (*Archaeological Heritage Office Saxony, Germany*), **Christiane Frirdich** (*University of Leipzig, Germany*), **Isabel Hohle** (*University of Leipzig, Germany*), **Denise Girardelli** (*University of Leipzig, Germany*), **Thomas Tischendorf** (*Archaeological Heritage Office Saxony, Germany*), **Harald Stäuble** (*Archaeological Heritage Office Saxony, Germany*)

Between 1993 and 2003 large scale excavations in the opencast lignite mining of Zwenkau revealed in the territory of the abandoned village of Eythra rich evidence of early neolithic settlement (LBK and StK). Approx. 300 ground plans of houses, one StK rondel, one possibly also StK “palisade wood henge” and one neolithic enclosure as well as two LBK wells, numerous other features and finds were detected on an area of about 30 ha. This provides a good basis for the examination of continuity or change on the level of ceramics, architecture and settlement patterns.

Preliminary results from multivariate analyses of pottery assemblages will be presented and interpretations relevant with regard to the aims of this session considered. It will be up for discussion where and when StK pottery is introduced in Eythra and within a wider regional framework. The structural and systemic characteristics of this process and models pertaining to its ‘socio-cultural’ explanation can thus be reconsidered.

Only about 16% of the houses can be dated to the StK displaying various types of groundplans. Investigation of typological elements and the spatial distribution of housetypes as well as their relation to the earthworks will contribute to the discussion of culture change.

#### **A44.10: Where just take the stone? Changes in the distribution of lithic raw materials during the first half of the 5th millennium B.C.**

by **Petr Šída** (*The University of West Bohemia, Czech Republic*)

During the earlier Neolithic in Central Europe remained stable network of relations allowing distribution of lithic raw materials over long distances. The largest distribution system (DS) have metabasites of Jizera mountains, that reach up to 500 km from the source. Raw materials for chipped industry have a stable DS of smaller extent. In Bohemia flint is dominating.

During the first half of the 5th millennium DS start rapidly change. DS of polished stone industry becomes smaller. It appears a large number of small local workshops, using either local materials or metabasites from river terraces or

older tools to re-utilize. Quarrying in primary outcrops according to our current knowledge ends. Changes of the DS of chipped industry raw material are not so significant. Old main raw materials still play an important role, new start to be used in bigger amount (Bavarian plattensilex, Moravian hornfelses).

The reasons for changes in DS remain unclear. Main outcrops of metabasites look to be quarried up, but other outcrops are not completely exhausted. Decay of distribution networks will probably have more reasons. One of them may be gradual decay of cultural network of earlier Neolithic to the individual regional groups whose spatial extension is significantly smaller.

#### **A44.11: Lithic Exchange Systems during the LBK-Post-LBK Transition: Dramatic Change or Continuous Development? A Case Study from Northwestern Bavaria**

by Silviane Scharl (Cologne University, Germany)

In the southern part of Germany the lithic raw material procurement from LBK to Post-LBK undergoes a dramatic change – at least at first glance. With the onset of the Post-LBK period lithic assemblages are dominated by raw material from the Arnhofen flint mine in Lower Bavaria – a fine-grained banded tabular flint. The exchange networks of the LBK which had worked for centuries seem to have collapsed. This in turn is interpreted as the consequence of a crisis at the end of the LBK. For some regions, as e.g. northwestern Bavaria (Franconia), even depopulation is assumed.

The analysis of flint assemblages from LBK as well as Post-LBK-sites in this area shows, however, that there are continuous developments, which cannot be ignored. While LBK exchange networks stay alive, contacts to Lower Bavaria are intensified, however. This is not only reflected in considerable quantities of tabular chert from Arnhofen, but also in the construction of a rondel which picks up architectural elements characteristic of several rondels in Lower Bavaria. Instead of a dramatic change we have to think about modified supraregional communication networks, which are reflected in Post-LBK material culture.

#### **A44.12: Distribution of northwest Bohemian quartzites in the first half of the 5 millennium BC**

by Miroslav Popelka (Faculty of Arts, Charles University in Prague, Czech Republic)

The paper is devoted to review the most significant types of quartzite in northwestern Bohemia, their sources and distribution in the expansion of the Stroked Pottery culture in the first half of the 5th millennium BC.

In northwest Bohemia, there are several outcrops of quartzite, which have been used in varying degrees of intensity by prehistoric societies since the Palaeolithic period. This paper deals with the use and distribution of quartzite type Tušimice, Skršín and Bečov during the Stroked Pottery culture in Bohemia, on the basis of the analysis undertaken files of the chipped stone industry.

### **POSTERS**

#### **A44.01-P-2: The Testimony of the Late Neolithic settlement area with a rondel in Praha Ruzyně**

by Tereza Blažková (Labrys, o. p. s., Czech Republic)

An extensive settlement area dated to the Stroked pottery culture (StK) was exposed and documented during the series of excavations in Praha-Ruzyně (2003–2008). The circular ditch enclosure – rondel, dated to late StK, an important part of this settlement area, was completely unearthed and explored. The excavation of the major part of the settlement area from StK culture environment with rondel is unique in the Czech Republic. Excavated areas have a potential for studying the internal structure of late Neolithic settlement area, for both, chronological and spatial development. Several chronological phases StK II/III-StK V have been already identified based on pottery.

Several types of settlement features, including remains of building ground plans, and the so-called storage features, have been identified. These storages were rich in animal bones and daub often with imprints and with few exceptional findings of oblong protrusions with inner hole made of daub. Few very large pits for clay extraction were explored. There were also discovered traces of the manufacturing activity with number of stone blades and flakes made from Bavarian plattensilex stone. It shows on supraregional contacts. Rondel, which consists of two concentric ditches and three palisade troughs with two entrances, represents quite specific object type.

#### **A44.02-P-2: Shifts of settlement, internal organization and the change in waste treatment to late Neolithic settlement in Jaroměř (Eastern Bohemia, Czech Republic)**

by **Pavel Burgert** (*Institute of Archeology, Czech Republic*)

In the prepared poster, I would like to focus on the spatial arrangement of late Neolithic site the Stroked Pottery Culture (STK/SBK) in Jaroměř (4900–4500 cal. BC – East Bohemia, Czech Republic) in its various phases of settlement. At the excavated area, there was found at least fifteen ground plans of long houses that belong to the three building types (traditions). Out of several dozen objects it was possible to recognize a group of so-called storage pits and pits which spatially related to the period of usage of houses. The stone industry dominated in findings (millstones, remains after production of polished industry), especially in the younger stages of settlement when ceramics noticeably waned. I will focus on:

- changes in forms of ground plans of longhouses in time relative chronology STK/SBK
- spatial shift of settled areas

Further information will be confronted by the spatial arrangement of selected types of settlement features, in particular the storage pits. It will be also emphasised behavioral changes in waste treatment which in the Jaroměř site showing noticeable decrease in the number of findings of ceramic shards in pits apparently spatially related to the functioning of houses in the younger phases of settlement.

#### **A44.03-P-2: More than just ceramics: The formation and development of the Bavarian group of Stroke-ornamented Pottery Culture**

by **Florian Eibl** (*Independent researcher, Germany*)

The middle neolithic culture phenomena in the fertile and since the time of the Linear Pottery Culture densely populated areas of southern Bavaria are fraught with many questions regarding the origin and associated cultural traditions. In examining the Bavarian group of Stroke-ornamented Pottery Culture (=“StK”) the by far largest group of finds – the ceramics – delivers not just notes on chronology, but also provides arguments for questions of cultural history. Conversely, the focus on analyzing pottery, which dominated the research, obstructed the view to further cultural-historical aspects.

The emergence of the Bavarian StK apparently was caused by influences from outside but rooted clearly in the Linear Pottery Culture of southern Bavaria. This is shown in the synopsis of the results of the analysis of pottery, settlements, burial practices and particularly the “special” finds as for example bracelets or zoomorphic and anthropomorphic figurines. Thus, not only theories of “immigration” are refuted, but it is also detectable that the Bavarian group of the StK is actually a developed regional variant of late Linear Pottery Culture, while the subsequent (younger) group Oberlauterbach already shows characteristics of transdanubian culture phenomena of early copper age in regards to ritual practices.

#### **A44.04-P-2: Changes in Ceramic Technology in the Early Neolithic – A Case Study from Eythra/Northwest Saxony (Germany)**

by **Isabel Hohle** (*University of Leipzig, Germany*), **Oliver Mecking** (*Thuringian State Office of Heritage and Archaeology, Germany*), **Sonja Behrendt** (*Thuringian State Office of Heritage and Archaeology, Germany*), **Sabine Wolfram** (*State Office of Archaeology Saxony, Germany*)

The early Neolithic site of Eythra, distr. Leipzig, excavated in forefront of the opencast lignite mining Zwenkau, represents the largest excavated settlement area of Linear and Stroke Pottery Culture. Situated on the western bank of the river Weiße Elster the site provided, along with a small LBK settlement on the eastern bank, a large amount of ceramics dating from the oldest LBK to the younger StK phases. Thus the ceramic data is most suitable for studies of cultural change and continuity. Typological, geochemical (ICP-MS) and elemental distribution maps (micro-XRF) are used to analyse the changes between the major phases of the LBK and StK each. So far the results demonstrate that the changes from the oldest to the older LBK were gradual and slow, especially with respect to the coarse ware. The most recent analyses proved the marked differences in pottery technology between the LBK and StK. Also different clay mixtures were used between the LBK and StK. This can be shown with the trace element analysis. When this change first occurred is still open to debate and to further analyses. The Poster will present the current analyses and interpretation with special focus on a comparison of LBK and StK pottery technology.

#### **A44.05-P-2: Neolithic rockshelters and settlement patterns in the border landscape of North Bohemia / Saxony**

by **Vladimír Peša** (*Regional museum and gallery, Czech Republic*)

Lying between the Neolithic settlement regions of central-northwestern Bohemia and the Dresden Basin is a landscape of border mountains and foothills. In the Mesolithic and Neolithic periods, this area was home to three types of sites: rockshelters, open-air sites, and stray finds of stone artefacts. The latest Mesolithic dates (5600–5500 BC) are evidenced only in areas more distant from LBK settlement regions without LBK sites. LBK reached only the margins of the studied region, with 1 isolated site from the Šárka Phase/StK located deeper within. StK reached further into the unsettled landscape, whereas sites from the foothill mountains fall within the Proto/Early Eneolithic. Stray settlements lie within loess-clay regions. Preferred rockshelters are those on the boundary between open landscape and rocky areas and are generally smaller than a longhouse. The cultural layers below rockshelters contain fireplaces and a small set of finds. The poor find situations at most LBK and StK sites preclude a more detailed interpretation, but differ from prior Mesolithic sites. A mineralogical-petrographic analysis of pottery from two close sites revealed a different production tradition. The only evidence of cult activities (a vessel depicting an orant) comes from the StK horizon at the “Stará skála” rockshelter.

#### **A44.06-P-2: The Neolithic Site of Hrdlovka (Czech Republic): data processing and analysis of the Linienbandkeramik (LBK) and Stroked Pottery (StK) longhouse units**

by **Václav Vondrovský** (*University of South Bohemia, Czech Republic*), **Jaromír Beneš** (*University of South Bohemia, Czech Republic*), **Michaela Divišová** (*University of South Bohemia, Czech Republic*), **Lenka Kovačiková** (*University of South Bohemia, Czech Republic*), **Petr Šída** (*University of West Bohemia, Czech Republic*)

The Neolithic settlement site of Hrdlovka (NW Bohemia, Czech Republic) was excavated during the years 1987-1991 as part of large scale rescue project in the area of open brown coal mining activity. The site provided number of LBK and STK longhouse ground plans with remarkable construction details and associated sunken features. The methodological approach can be represented by analysis of ground plan No. 3 with its associated features. The infill of the sunken features and its taphonomy could be understood as a complex deposit shaped by various factors and generating many questions. This fact is reflected namely by ceramic artefact processing, which provides sufficient chronological framework. Data obtained from archaeozoological and stone industry analyses are also presented.

## Session A45

### What should a PhD in Archaeology be all about?

Thursday, 5 September 2013, 08:30–13:00

Room: EU 108 (Building 1, ground floor)

**Organisers:** **Arkadiusz Marciniak** (Adam Mickiewicz University in Poznań, Poland) and **Ian Ralston** (University of Edinburgh, UK)

The Bologna agreement has had much success in aligning university curricula widely over Europe around a common (bachelors + masters + doctorate) pattern and in simplifying university qualifications across the continent in order to favour mobility, but there remains much variability concerning the nature of the PhD. In this session, proposed by the EAA Committee on the Teaching and Training of Archaeologists, we welcome papers which explore this variability, from PhD students, recent PhDs and those who supervise or examine PhDs. Themes may include:

- should PhDs be graded beyond pass/fail?
- what is suitable content for a PhD (e.g. are site reports appropriate content?)
- the relation of PhDs to professional practice
- what can reasonably be expected in three years of work, especially in terms of new, 'original', research?
- comparisons of different systems
- the question of how far content can deviate from Archaeology and still be considered a PhD in Archaeology
- and specific discussions of the organisation of PhD supervision and examination, especially regarding those systems where PhD study can take place outside a University.

#### A45.01: Assessing an Archaeology PhD

by **Mark Pearce** (University of Nottingham, UK)

In this paper I shall explore the process of examining a PhD by comparing two systems, one where the 'viva voce' examination is at the heart of the evaluation of the PhD, the other where the 'discussion' is largely formal and ritualised and in which assessment of the submission is based on the written dissertation. I shall ask questions about the fairness of each system, about the role of the Supervisor and the Internal Examiner(s), asking how much weight these should have in assessment, and about the responsibilities of the External Examiner(s), particularly as regards the unequal power relationship sometimes involved in the role, but also about the qualifications necessary for these roles.

As the PhD evolves from a 'gold standard' lifetime's work to three year's research, I believe that we need to reflect on what we think the PhD is, and what it is appropriate to expect from a candidate and from those involved in the Examination process.

#### A45.02: Obtaining a PhD in Belgium

by **Marc Lodewijckx** (Leuven University (KU Leuven), Belgium)

In 1980, the authority on education in Belgium was entirely transferred from the national level to the three linguistic communities: the Flemish, French and German Communities. Since then, each community has independent authority on the structure, regulations and financing of the schools and universities of its own educational system, based on language. Instead of facilitating unification, the introduction of the Bologna process produced further dissimilarities. The traditional educational structure, consisting of two plus two years, was replaced by the conventional European system of three years for the Bachelor's degree, followed at the Flemish universities by only one year for the Master's degree while at the universities of the French Community, it takes two years to develop into a Master. Nevertheless, and despite discussions and consultations, the conditions for obtaining a PhD are still similar with the ones abroad. Outstanding Master students can apply for a four year PhD scholarship, financed by regional scientific committees, while others try to finish a PhD thesis within the framework of a scientific project. However, PhD students now need to demonstrate that they are well embedded within the international research community by giving lectures at specialized conferences or attending particular courses at universities abroad.

#### **A45.03: Romanian archaeology and PhDs. Different systems, different views?**

by Monica Nicolaescu (*“Vasile Parvan” Institute of Archaeology, Romania*), Roxana Morteau (*University of Bucharest, Romania*)

There are several universities today in Romania where PhD study can take place, but there is also an alternative possibility within the Romanian Academy system. The Bologna agreement was implemented within both structures and radically changed not only the old system of PhD studies (which was 7 +2 years) but also perceptions about PhDs and PhD papers. This paper's aim is to give an introduction to the Romanian system of PhD studies highlighting certain cases, representative of the two different systems: the university system and the Romanian Academy system. What is a PhD thesis in archaeology all about? Are these different systems creating different ways to elaborate a PhD thesis? What are the distinctions between a university PhD student and a Romanian Academy one, with specific reference to archaeology? To what extent do the research themes proposed vary according to the different institutions? Our approach will outline the similarities and differences encountered in these two systems from a PhD student's point of view, and shall also take into consideration issues like what can be achieved in three years, what is to be expected from students and what constitutes suitable content for a PhD thesis in archaeology.

#### **A45.04: “Between short and long there is no medium”. Too little time to study the longest time-span in human history.**

by Dănuț Prisecaru (*Alexandru Ioan Cuza University of Iași, Romania*)

The aim of this paper is to discuss the implications of a three-year Ph.D. programme in prehistoric archaeological studies, in order to make comments on the directions a young researcher should follow. For many decades, in Romania (and not only there), doctoral theses have covered long periods (e.g. the whole of the Bronze Age) and large areas, because the candidates were allowed to work on their topics for several years. Nowadays, having finished a Ph.D. is a *sine qua non* condition in order to become established as an expert in archaeology. In these conditions, what should be done? Is it a good idea to reduce the time-span or the area studied? On the other hand, for a Ph.D. that considers artefacts should we include in our studies the analysis of artifacts that were discovered in the XX th century and have no clear recorded data as to their archaeological context? These are only a few of the matters that I propose to discuss, starting from the author's Ph. D. theme, in order to see how original a three – year Ph.D. can be, or whether it represents an intellectual compilation. I also wish to discuss the scale (number of pages or word count) that a thesis should have.

#### **A45.05: PhD in Archaeology as an interdisciplinary research. Modern trend or methodological necessity?**

by Wawrzyniec Miscicki (*Jagiellonian University, Poland*)

In the recent years we observed a trend for shifting researches towards a more interdisciplinary approach. The object of this paper is to present both benefits and problems caused by drifting apart from the field of archaeology by which I understand not only incorporating new methodologies but also isolation from professional practice. The focus point would be field of classical archaeology where interdisciplinary approach is particularly popular. When met with different ideas it is tempting to incorporate them into research. Anthropology, sociology, economy and even history of art are waiting to be used, not only as a source of additional data, but as a new methodologies for reconstructing ancient societies supporting entire thesis. How far can a PhD go on this path to still be called an archaeologists? Finally, what about the conservative archaeologists? What perspectives do they have? Sticking to your field of science is not as backward as one may think, it could still be beneficial and it is strongly connected to practice. Or perhaps there is a golden mean which PhD could take.

#### **A45.06: PhD by Research Publications**

by Kenneth Aitchison (*Landward Research Ltd, UK*)

Some higher education institutions accept applications for the award of a PhD “by Research Publications”. This allows for accreditation of work that a researcher might have undertaken outside formal higher education, but that is of equivalent quality and importance, and that has taken the equivalent amount of time and effort, to that needed for a PhD “by Research”.

The speaker was awarded his PhD by this route from the University of Edinburgh in 2011, and was only the second ‘archaeological’ candidate to have obtained a PhD by Research Publications from that University – but my PhD was not about the material remains of human life in the past, it was about archaeological employment in the present and a contemporary history of professional practice.



This paper will explore both the effectiveness of PhD by Research Publications as a mechanism for recognising academic research, and the expansion of archaeological studies away from the conventional understanding of “archaeology”.

**A45.07: Mature students and the PhD cursus: a case study**

by ***Michael Timpler*** (*University of Neuchâtel, Switzerland*)

There appears to be an academic push for doctoral theses in archaeology to be focussed (i.e. narrow) and time limited. The pressure to complete the research and draft the thesis can impair the quality of the research, which may as a consequence not be made available to the wider public. As a self-funded mature student, the author stuck out for a wide ranging humanistic subject, which looks at broad issues regarding the transition from hunter-fisher-gatherer to herder and agriculturalist societies between the Aegean Basin and the head of the Adriatic.

## Session A46

### When the potters make the story: what can pottery tell us about the people who made and used it?

Thursday, 5 September 2013, 08:30–18:30

Room: EP 130 (Building 1, ground floor)

**Organisers:** **Laure Salanova** (CNRS, France) and **Alison Sheridan** (National Museums Scotland, UK)

Pottery is the main component of many archaeological assemblages and, for over a century, it has been one of the main tools used to define cultural identity and to characterize culture change. But the simplistic equation of 'Pots = people' has rightly been challenged, and in the meantime a huge ethnohistoric literature has grown up around the question of what technical and stylistic traditions actually mean to the people who make and use pots. Such studies indicate that several different aspects of identity can indeed be conveyed through the design and manufacture of pottery – and that there is also much more that pottery can tell us about society (e.g. through examining its uses, the organization of its production, its symbolism, its movement, etc.). These studies also make it clear that choices in the chaîne opératoire of pottery manufacture are not determined by the function of the end product – something that was illustrated during the 17th Annual Meeting of the EEA in Oslo, in a session that focused on the link between function and ceramic technology.

Pottery clearly does have a role to play in understanding the nature of prehistoric society. This session poses the question: are we, as archaeologists, making the most of what pottery can tell us about its makers and users? Are we asking the right questions and using the correct approaches when we study it? Can we enhance its heuristic value? What kind of history does the study of pottery reveal to us? Examples of informative approaches will be presented, extending from prehistory to the present to offer a longue durée perspective. This session will be a joint initiative of the Société Préhistorique Française and the Prehistoric Society.

#### **A46.01: When the potters make the story of Sai Island (Upper Nubia, Sudan) from 7000 BC to 2600 BC**

by ***Elena Garcea*** (*University of Cassino and Southern Latium, Italy*)

Sai Island lies in the river Nile, between the Second and Third Cataract, in Upper Nubia, which was linked to Lower Nubia in Egypt and the Levant to the north. Thanks to its position, Sai favored the emergence of social complexity with dramatic changes that were represented in pottery productions. Pottery making in this region was initiated by hunting-fishing-gathering groups (Khartoum Variant, 7000–5000 BC) who produced large vessels with impressed decorations and lived in semi-permanent occupations. The following groups adopted animal herding, but not agriculture (Abkan 5000–4000 BC). At this time, pottery included small, undecorated bowls, often tempered with animal dung. In the subsequent period (Pre-Kerma, 3300–2600 BC), groups with a mixed economy with cultivation of Near Eastern crops featured black topped pottery with impressed and incised decorations. During this period, emerging elites developed and probably controlled long distance trade.

By presenting different chaînes opératoires of pottery manufacture, not only based on stylistic and morphological variables, but also on mineralogical, petrographic and chemical analyses, this paper aims at providing the perspective on a long time period from a different geographic area in order to contribute to the scientific narrative that cultural choices can often reflect technological changes.

#### **A46.02: The management of the raw material in the first ceramic productions of the river basin of the Mediterranean: First data and considerations for a global evaluation**

by ***Xavier Clop García*** (*University Autònoma of Barcelona, Spain*)

The accomplishment of an ample research project, in course at the moment; around the management of the raw materials of the first ceramic productions in the river basin of the Mediterranean it is allowing to obtain a not known joint vision and to begin to raise questions of the maximum relevance on the beginning of the ceramic productions in the different zones that form the river basin of the Mediterranean. Thus, for example, the development of the project, that so much is based on an exhaustive analysis of all the documentation available around this question as in the accomplishment of new studies of archaeometric characterization of some particularly excellent sites of the Near East, the Balkans and the Iberian Peninsula, it affect questions as the existence or not of artisan traditions from the use of certain types of temper additions, the possible relation between the management of the raw material and the major or minor aptitude for one or the other use of the ceramic vessel, etc. In this communication we will present the first results obtained within the framework of this project and the hypotheses and research lines will be exposed that are being developed.

#### **A46.03: The adoption of pottery in south-eastern Europe: Social or economic factors?**

by **Julien Vieugue** (Institute of Archaeology and Ethnology, France), **Kostas Katsakis** (University of Thessaloniki, Greece), **Laure Salanova** (Institute of Archaeology and Ethnology, France), **Giorgos Toufexis** (Archaeological Museum of Larissa, Greece)

In south-eastern Europe, Pottery is introduced with the Neolithic way of life. The reasons for its adoption are the subject of controversial debates. Some researchers suggest economic mechanisms. People who practiced agriculture and kept livestock would have needed fired clay vessels for food storage and cooking. Others claim social factors. Neolithic communities would have used pottery as prestigious goods.

This paper presents the results of a comparative study on the function of the earliest pottery from Greece and Bulgaria (6400–5600 BC). The combination of typometric aspects (shape, size, capacity) and use-wears (residues and attritions) of ceramic vessels has revealed the diversity of pottery uses at the beginning of the Neolithic: culinary (storage, cooking, consumption), technical (other production?) or symbolic functions (bone powder?). The pottery function shows no chronological evolution, it has however strong regional variations. It seems, in fact, that the pottery has not been adopted for the same socio-economic purposes. These results lead us to reconsider the relevance of the stylistic/technological criteria previously used to identify the reasons for the adoption of the pottery during the Neolithic.

#### **A46.04: Pottery as memory item at Çatalhöyük**

by **E. Nurcan Yalman** (Istanbul University, Turkey)

When Çatalhöyük was excavated in the 1960s by James Mellaart, it was presented as an enigmatic site with strikingly diverse and abundant symbolic representations. In each field season, Mellaart reported such finds from buildings he considered as “shrines” and/or “temples”. Therefore, the pottery of Çatalhöyük often stayed in the shadow of the fame of the site. However, recent research of the Neolithic pottery from Çatalhöyük has focused on memory and identity of the potters at Çatalhöyük and has considerably changed our understanding of their pots which were previously seen as mundane and monotonous. With the exceptional spatial and temporal contextual information from the site this new pottery research is also contributing to a better understanding of questions of technology (provenience studies of raw material), chronology and symbolic meanings. Especially the building sequence at the South Area of the East Mound offers a unique opportunity to study both changes and continuities in symbolic meaning in terms of memory keeping in time and space. This paper will discuss and scrutinize these changes and continuities within the context of the Central Anatolian Neolithic.

#### **A46.05: Bull Symbolism on Neolithic Pottery in Anatolia**

by **Necmi Karul** (Istanbul University, Turkey)

Bull Symbolism on Neolithic Pottery A number of animals were chosen to enrich the symbolical realm and to strengthen the expression in prehistoric times. Same animals take on different tasks in different cultures or periods, or become tools of different expressions in time. In Anatolia and Near East, we can observe that some animals were attributed a more significant meaning and some of them are more privileged even today, after thousands of years. Species like bull, vulture, deer or serpent had been among the mostly portrayed since the earliest stages of Neolithic period. Among these, bull was the one which was portrayed the most in symbolical way of life, and is an animal of symbolism which has not lost its significance even today. Wild bull portrayed on steles in Göbeklitepe gave way to the domestic bull on pottery after a few thousands of years. Bull and its stylized figure are one of the symbols that was borne from Anatolia to Europe with the Neolithic package.

#### **A46.06: New Advances in W.-Mediterranean Early Neolithic Pottery Sourcing and Technology**

by **Didier Binder** (CNRS, France), **Marzia Gabriele** (Università di Pisa, Italy), **Jean-Marc Lardeaux** (Université de Nice, France), **Christèle Vêrati** (Université de Nice, France)

Across NW-Mediterranean, Early Neolithic development and peopling resulted of a leapfrog-like seafaring spread of pioneers groups supposed to be originating from the South-Eastern Italian Impressed-Ware core. A rather short span of time has been spent for this transfer, if one considers the earliest evidences of farmers settlements in the Apulia core (c. 6000 BCE), and the earliest ones along the North-western Mediterranean coast (c. 5800 BCE).

One of the main locks up for understanding the transfer processes is to identify reliable traditions among a huge diversity of pottery styles. Considering the whole pottery technical subsystem and the whole aspects of the *chaînes opératoires*, from sourcing to shaping and use, offers new perspectives for solving such issues.

This paper will present new challenging methods for pottery analysis from the Liguria and High-Tyrrhenian Early Neolithic contexts, focusing on some examples of highly tempered coarse productions made from plutons, metamorphic and volcanic altered materials. Geochemistry, dating and mineralogy applied to these contexts highlight the question of the mobility of people and pots. In addition, high resolution sourcing contributes to elaborate experimental protocols for understanding the shaping and firing methods and related skills, in the perspective of identifying cultural traditions.

#### **A46.07: Cultural and chronological features of Early Neolithic pottery of southeastern settlements of Albania**

by ***Edlira Andoni*** (*Center of Albanian Studies, Albania*)

Since 2011 I am a PhD student in the Center of Albanian Studies in Tirana (Albania).

I choose as PhD theme “Cultural and chronological features of Early Neolithic pottery in Albania” because Albania offers a very interesting geo-archaeological situation of early Neolithic period. More than 15 settlements appertain this period; mostly of them excavated and studied before years '90.

The goal of the study is to be focused on the typology of Early Neolithic pottery in Albania (shapes, dimensions and decorations techniques of it). So, in the end I will conclude with diversity/ homogeneity in relation with function and gathering all data to give an opinion about the diffusion / adoption of first pottery productions in my country. The paper that I would like to present if I will have the opportunity to be part of the meeting will be focused in these issues, in particularly in the “Cultural and chronological features of Early Neolithic pottery of southeastern Albania settlements”. I will include in this study all the ceramic material of the period published and unpublished from the archaeological storages of Albanian Cultural Heritage and Archaeological Museums.

#### **A46.08: Ceramic productions in the context of emergence of the first Neolithic in Central Europe: a technological approach of early Neolithic pottery assemblages in Hungary (first half of the 6th millennium)**

by ***Louise Gomart*** (*ELTE Institute of Archaeological Sciences, Hungary*), ***Pál Raczky*** (*ELTE Institute of Archaeological Sciences, Hungary*)

This presentation stems from an ongoing project (Fyssen Foundation and ELTE Institute of Archaeological Sciences in Budapest), which aims to better understand the factors that led to the emergence of the Linear Pottery cultures in Central Europe through a technological study of pottery assemblages in Hungary.

On the basis of this research and analysis conducted on Balkans Early Neolithic assemblages in western Bulgaria (franco-bulgarian mission and Egide Project), we will attempt to understand the modalities of emergence of pottery technology in Central Europe.

Thanks to the characterization of the technical know-how carried out in this culturally contrasted region and by considering the vessels in terms of technical traditions, social relationships, apprenticeship and knowledge transmission, our aim is to identify and differentiate the social groups involved in pottery production. The spatial and chronological analysis of the technological data allows studying the history and organization of these producers groups and defining their possible interactions in a context of cultural transitions.

#### **A46.09: The most ancient ceramic traditions of the Eastern Europe: technology, morphology and decor**

by ***Andrey Mazurkevich*** (*The State Hermitage Museum, Russian Federation*), ***Ekaterina Dolbunova*** (*The State Hermitage Museum, Russian Federation*)

Several “chaines operatoires”, morphological and decorative traditions can be revealed in early Neolithic ceramic complexes from different parts of Eastern Europe (Low Don (site Rakushechny Yar), sites of Dnepr-Dvina basin and Upper Dnepr, Upper Volga (site Zamostie 2). They allow reconstructing the mechanisms of traditions distribution and conservation; reflect regionality and microregionality of traditions as well as changes of potters' generations. Several common vessel forms and combinations of different forms and volumes existed. Changes of vessel forms and the increase of their volume is observed through the time. Regional and microregional distinction can be traced in the development of decorative traditions marking the contacts with definite territories. In many cases technology remains without any changes while decorative system modifies.

Basing on this analysis and taking into account C14 dates the ways and time of the most ancient ceramic traditions distribution on the territory of Eastern Europe was supposed. The first pottery appeared either as a result of migrations or was distributed as a status technology. It is the only innovation which marks the beginning of Neolithic assimilated

by Mesolithic inhabitants. It conserved its initial technological, morphological and decorative traditions in some regions and was strongly modified on other territories.

#### **A46.10: Meeting the first potters of Britain and Ireland: Carinated Bowls as elements of identity?**

by Hélène Pioffet (Rennes 1 & Durham Universities, France), Luc Laporte (CNRS, France), Chris Scarre (Durham University, UK)

In Britain and Ireland the first pottery seems to have been made during the process of Mesolithic-Neolithic transition, appearing within a rather short period of time (c. 4200/3900 BC). The transition occurs after a long pause in the spread of the Neolithic that the barrier presented by the sea crossing is not sufficient to explain on its own; there are significant parallels with other European transitional contexts. Within these, carinated vessels appear in numerous regions of Northern and Western Europe more or less within the same period, showing a noticeable rupture with preceding ceramic styles. They appear relatively rapidly and widely in Britain and Ireland, and continue in use until c. 3600 BC. The present project, developed in the context of a PhD programme, seeks to deepen the study of these vessels through both a new typological classification and the analysis of pottery technology, drawing comparison between British and Irish carinated vessels and those of the Near Continent. Indeed, identifying the transmission of styles and technological knowledge between Continental and British/Irish material can provide significant clues about the formation of certain insular identities. Initial results appear to show multiple relations with the Near Continent, within an extensive network of ceramic styles and pottery skills. Among these styles, Carinated Bowls help to highlight a specific and complex process of transition.

#### **A46.11: Characterizing ceramic surface treatments: methods and first archaeological applications**

by Cédric Lepère (CNRS, France)

Ceramic surface treatments resulting in polished surfaces are frequent during all the Neolithic period and show a significant variability. Although many studies contribute towards a better understanding of some aspects of these treatments, none of them provide a genuine technical and traceological reconstitution method in archaeology. This communication outlines a set of specific experiments designed to test the influence of five main factors on the traces formation process (tool, movement and active part of the tool, paste water content, hydration process and superimposition of the various treatments).

The results of the traceological analysis show that four main techniques can be highlighted through this approach. For example, applied to a corpus of 2 500 vases from the Provençal Chassey culture (4250–3500 BC. Cal.), this method highlights the complexity of surface treatments which can combine up to 4 techniques. Archaeological pottery examinations show the role of surface treatments in defining "technological styles", differentiating the nature of ceramic production and distinguishing groups and settlements from one another. As a result, these experiments entail a methodological innovation to archaeology, yielding a broader perspective into prehistoric technologies.

#### **A46.12: Lessons learned about the makers of Early to Middle Neolithic 'Peterborough Ware' in England and Wales, from applying a French technological perspective to studying the chaîne opératoire**

by Vincent Ard (ATER Université Toulouse 2 – Le Mirail, France)

The application of a technological approach to the study of pottery making that focuses on traditions relating to the chaîne opératoire has proved fruitful in the study of French Neolithic pottery and of the people who made it. That technique has recently been brought to bear on the study of so-called 'Peterborough Ware' – a type of Early to Middle Neolithic pottery that was in use between c 3600 and c 2900 BC in England and Wales (with similar, regionally distinct pottery in use in Scotland and Ireland). This paper discusses the kinds of insights that can be gained by applying this approach, and the specific findings about 'Peterborough Ware' pottery.

#### **A46.13: Getting pots to write their autobiographies of use: the analysis of organic residues**

by Lucy Cramp (University of Bristol, UK)

Advances in the analysis of organic residues in pottery, and in particular the application of organic chemistry to study absorbed lipids, have made it possible not only to find out how a pot had been used, but also to detect multiple episodes of use. The most recent advances have even enabled analysts to detect minor traces of marine foodstuffs if they are present. The results of a major programme of lipid analysis, featuring Neolithic and later pottery from the United

Kingdom and the Channel Islands, has shed new light on the way in which pottery was used and on the diet and styles of food preparation of prehistoric communities. Some clear trends can be seen, and these generally harmonise with other sources of information about diet (e.g. carbon and nitrogen stable isotope analysis of human bone).

**A46.14: Contact, coexistence, coaction: first thoughts about the ways of interference as reflected by the ceramic material of Polgár-Csőszhalom, Hungary**

by **Katalin Sebők** (Eötvös Loránd University/Eötvös Loránd Tudományegyetem, Hungary), **Márton Szilágyi** (Eötvös Loránd University/Eötvös Loránd Tudományegyetem, Hungary)

The Late Neolithic site of Polgár-Csőszhalom, consisting of a tell surrounded by a large horizontal settlement is situated in North-Eastern Hungary. The complex evaluation of its find material, including approximately 300,000 ceramic fragments finally started last year. The first analyses of the ceramic material of the horizontal settlement (corresponding with the lowermost settlement horizons of the tell) begun to reveal fine details regarding the nature of interactions between the styles of the main archaeological units present: the Tisza, Lengyel, Samborzec-Opatów, Iclod-Herpály Cultures and the local „black painted” ware. The presentation focuses on the methods of processing and evaluation, presents the types of contact detected thus far and offers a survey of the possibilities, quite diversified even at this very early stage, of social and cognitive interpretation regarding the function and role of particular elements of clayware.

**A46.15: In the heat of kilns: assessing the technology of Iberian potters at the end of the Iron Age**

by **Nicolas Frèrebeau** (University of Bordeaux 3, France), **Alexis Gorgues** (University of Bordeaux 3, France), **José Antonio Benavente Serrano** (Consortio Patrimonio Ibérico de Aragón, Spain), **Charlotte Sacilotto** (University of Bordeaux 3, France)

The spatial and temporal definition of the Iberian domain as an archaeological culture is partly based on the identification of a particular ceramic production. The apparent homogeneity of the Iberian pottery (beyond regional and chronological variations) does not imply a unique technology through the entire territory. The potters workshop of the Mas de Moreno (Foz-Calanda, Teruel, Spain), in activity from the 3rd to the 1st century BC seems to illustrate the complexity of the social dynamics in the Ebro valley. Several firing structures have been identified and some of them are interpreted as muffle kilns.

This study therefore aims at discussing the mechanisms that led to the development of Iberian firing techniques. Indeed, the analysis of ceramic and raw materials highlights the technical choices made in this indigenous workshop of the end of the Iron Age. Far from a deterministic reading of the relationship between the workshop and its environment, we can provide several hypotheses regarding the adequacy between the firing technique and the available resources.

The attention paid to the production organization and techniques should help to identify the originality of these indigenous productions.

**A46.16: Pottery telling: From the mind of the potter to the people who used it**

by **Maria Giuseppina Gradoli** (University of Leicester, UK)

The abstract presents examples of interpretation of different petrological studies drawn from my geological and archaeological experience in Sardinia.

The first one was the subject of my MA Dissertation at the University of Leicester ‘*Pottery from the Underworld. A petrological analysis from a selected group of Neolithic – Middle Bronze Age ceramics from the Seulo’s caves*’ and brought to disclose the role played by the intentional smashing of an extraordinary Neolithic pottery assemblage during the performance of collective rituals inside a huge cave. These burnt sherds were eventually re-used during Early Bronze Age to temper new ritual pottery to be used in different cults.

The second one is part of my current PhD research at the University of Leicester ‘*Dynamic Social Changes and Identity. A petrological study of Bronze – Iron Age pottery from Sardinia’s Nuraghi*’. Here I shall show how to study the sequence of social changes that accompanied the first appearance of Nuraghi (megalithic towers), their later complexity and the shaping of a peculiar ‘Nuragic Social Identity’.

The third one will show how during the VII and VI century BC, a former Bronze Age site was peacefully inhabited by a ‘mixed community’ of local people and Phoenician colonizers.

#### **A46.17: New stories about a Middle Bronze Age pile of shards in Eastern Romania**

by **Neculai Bolohan** (Alexandru Ioan Cuza University of Iași, Romania)

According to current research trends, the local archaeologists are trying the diversification of opportunities for understanding the history beyond the artefact.

A new kind of theoretical background, a new cultural and political context allowed the access to technologies that were used to decrypt a new form of the artifact history. In this study case, the intention was to benefit of a set of scientific analysis applied to a specific batch of MBA artifacts from a distinctive area located in eastern Romania. The set of artifacts (pottery shards) comes from a site that define the Costișa pottery group located in Central and Northern Moldavia.

The case study reveal some important aspects concerning the fabrication process of ancient pottery through a multidisciplinary approach combining classical archaeological methods with those used in physics and chemistry. Multiplication of the analysis will improved the answers to the questions raised by archaeologists (technology, origins of the raw materials, function of the pots etc).

Thus, we will understand that artifacts, in this case pottery, are not merely a product of deliberate or accidental combination of minerals and rocks and other sources and is a cultural product.

#### **A46.18: Same people, changing fashions: Negotiating identities in NE Aegean**

by **Peter Pavúk** (Charles University, Faculty of Arts, Czech Republic), **Luca Girella** (Università Telematica Internazionale Uninettuno, Italy), **Miloš Gregor** (Slovak National Museum, Slovak Republic)

Aegean Bronze Age civilisations are usually divided by regions: into 'Mycenaean', 'Minoan', 'Cycladic', Northern Greek and Westanatolian. The problem arises, when almost all of these suddenly overlap, which in our case is the NE Aegean.

The two major involvements with the 'Minoan' and 'Mycenaean' world were explored in some depth by previous scholarship but the definition of local identities remained largely in the shadow, with more emphasis having been placed on the foreign cultures. A ceramic perspective can now be a useful tool to measure aspects of social identities and technological traditions. In this respect the concept of tradition has a great potential for discussing social identities, since it can recognize and measure changes in a continuum.

Using our hands-on experience with ceramic data from several relevant sites in the area (Troas, Lesbos, Samothrace), combined with results in petrography and NAA, we would like to move away from various colonisation concepts, and rather explain the changes in pottery production and technology as a result of active and conscious responses of the local population to changing external impulses, ranging from simple acculturation to more complex processes of hybridisation, as described by the now popular Post-colonial Theory.

#### **A46.19: Tradition and innovation: analysis of Early Iron Age ceramics in the Carpathian Basin**

by **Szabolcs Czifra** (Hungarian National Museum, Hungary), **Attila Kreiter** (Hungarian National Museum, Hungary), **Péter Pánczél** (Hungarian National Museum, Hungary)

This study examines a pottery assemblage from an Early Iron Age Scythian settlement recently excavated in NE Hungary dated to the sixth century BC. Detailed macroscopic, microscopic petrographic and geochemical analyses were carried out on a total of 55 pottery samples. The aim of the study is to shed light on the adaptation of technological inventions and to assess a possible relationship between wheel-made, classical and archaic type pottery.

The integrated approach adopted, along with the combination of our previous data on Iron Age ceramics, resulted in the characterisation of production for each ceramic ware. The results point towards a homogeneity among the analysed ceramics, especially within household wares, which revealed a close link between archaic and classical wares. According to the composition of ceramics the wheel-made wares were also locally made; and specialization could also be identified for this vessel type.

The results clearly show the ability of potters to adopt innovations (wheel-turning) while at the same time keeping their traditional techniques. The results suggest that Late Bronze Age potting traditions survived and became incorporated into Iron Age potting practices allowing us to shed light on a complex relationship between Bronze and Iron Age communities.

#### **A46.20: Mixed-Style Pottery in Western Sicily: A Multicultural Response to Social Entanglement**

by **William Balco** (University of Wisconsin-Milwaukee, USA)

Following the arrival of Greek colonists and Phoenician merchants from the eighth to fourth centuries BC, indigenous Sicilian pottery styles transformed, incorporating slightly modified elements of Greek and Phoenician styles alongside their own. Such mixed-style pottery has previously been characterized as local imitations of Greek forms, seldom accounting for the social significance underlying the manufacture and use of these vessels. This paper employs the theory of cultural hybridity to explore the production, exchange, and social significance of mixed-style pottery recovered from indigenous and Phoenician sites in western Sicily. Several questions address the social significance of mixed-style vessels, including: How might mixed-style vessels be classified? What social processes were responsible for the development of mixed-style vessels? How did mixed-style vessels represent the developing middle ground? What social message(s) might the use of mixed-style vessels have communicated?

Results from western Sicily suggest that mixed-style vessels appeared as an economic response combining indigenous and Greek techniques, forms, and decorations, to create a material middle-ground representing indigenous social transformation. These vessels represent the porous social boundaries of the sixth century BC among western Sicilian indigenes.

#### **A46.21: Bowls as document: A reflection about Coba bowls, serial production and personal consumption in the proto-historic Northern Mesopotamia**

by **Johnny Samuele Baldi** (Institut Français du Proche-Orient (Ifpo) – Maison de l'Archéologie et de l'Ethnologie René Ginouvès, France)

In the 5<sup>th</sup> millennium northern Mesopotamia, Coba bowls have been the first mass produced ceramic material: through new data from Tell Feres al-Sharqi (Assakeh Province, Syria), this phenomenon is presented as case study of a (sometimes frustrating) reflection about the heuristic exploitation of a ceramic document. This rough, quite standardized, locally produced and widespread ware seems to break the previously existing relationship between decorated, well cared (and, therefore, “individual”) pots and their producers or users. Nevertheless, interactions between ceramic and human individuals just change, as demonstrated by the special occasions for which Coba bowls were intended. On the one hand, the analysis of the *chaînes opératoires* outlines different technical traditions of producers, with their cultural distinctions through space and time. On the other, functional, depositional and spatial studies reconstruct the everyday relations between ceramics and users. The understanding of the local varieties and shared patterns of such a complex phenomenon needs a conceptual bridge between pots and people. Rather than search for a meaning (the process of making sense) by interpreting from the outside the materiality in the palimpsests, the integrated approaches here proposed try to reconfigure the meaning within heterogeneous networks of ceramics and people, as entangled socio-technological topic.

#### **A46.22: On the Prussian pottery traditions in the Early Middle Ages**

by **Malgorzata Karczewska** (University of Białystok, Poland)

In spite of more than a century old tradition of the archaeological studies on the West Baltic tribes in north-east Poland, we still haven't comprehensive elaboration of the Middle Ages Prussian ceramic workshop. Especially interesting are issues concerning two different ceramic styles in Prussian pottery production. The first came from an earlier West Baltic tradition dated to the Migration Period. The second showed the strong influence of the Slavic pottery. The fact of the simultaneous presence of materials of different cultural provenience was not sufficiently clear in the results of earlier excavations. Then, the pottery with features characteristic for Baltic or Slavic ceramic workshop were dated using typological method and chronologically separated. The results of the excavations carried out in the past few years – especially connected with project “The Ecology of Crusading”, indicate on simultaneously using of that two pottery styles. When that first acculturation in the history of medieval Prussians took place? Who were the potters made the Slavic-style ceramic? Were they Slavic craftsmen settled in the Prussian territory, or perhaps the Prussians, using potter's wheel skills acquired from neighbours? The features of the ceramic, both in Prussian or Slavic style, allow hypothesis responds to the questions above.



## POSTERS

### **A46.01-P-1: Decorated pottery in the study of La Tène art – methodological insights and interpretative proposals**

by **Gadea Cabanillas de la Torre** (*Universidad Autónoma de Madrid / Ecole Normale Supérieure, France*)

Although pottery remains the most common material in Iron Age settlements, decorated wares have often been underestimated in the study of La Tène art. “Celtic” art has long been a synonym for decorated metallic items, pottery being considered as marginal, playing little role in artistic development through long-distance contacts. This paper presents an overview of this problem and explores the potential of decorated pottery as a source of information for the study of artistic expression, decorated items production and their social role in this period. Special emphasis is placed on the case of stamped pottery. Our starting point is the observation of its success in apparently disconnected areas. The approach, focussing on Brittany, is based on the study of decoration construction, shapes and contexts as tools for comparison. The interpretation of these data, taking into account the specificities of pottery as compared to other decorated items, questions models usually applied to “Celtic” art showing that its association to elites might not be exclusive, that ideas associated to pottery circulated through a wide range of dynamics and following different paths, making it an essential material to trace the role of regional developments in a wide phenomenon such as La Tène art.

### **A46.02-P-1: Analyzing the connections between roman pottery and erotic art**

by **Cyril Dumas** (*Musée des Baux, France*)

At the beginning of the 21<sup>st</sup> century, those of us with a religious education, often confuse sexuality with immorality, leading us to see any erotic art as pornography. The Romans would have found absurd our contemporary attitudes regarding sexual orientation, our judgement about what is pure and impure; norman and pathological... Designating such antiquities as obscene or pornographic is contrary to the intent of their roman creators. Roman objects of art with sexual connotations are common, but few are seen. They are often kept in museum storage, hidden even from historians and curators. The few historians who have studied these works and had the courage to write about them, have been threatened with violence by the clergy (Payne-Knight, 1786). Documents were censored (The Worship of Priapus, 1786) and the work of art systematically mutilated, destroyed or sold into private collections, never to be seen again. To appreciate roman art, one must be able to read the symbolism of these objects. Romans understood that they did not represent reality, we need to view roman art as the roman did. What we see as erotic was not erotic in the roman world. These images tell stories of historical and moral significance.

### **A46.03-P-1: The Story of a Shard: Types of Information Revealed by Eneolithic Pottery from Sultana-Malu Roșu**

by **Theodor Ianaț** (*Museum of Bucharest, Romania*), **Vasile Opris** (*National History Museum of Romania, Romania*), **Catalin Lazar** (*National History Museum of Romania, Romania*)

The focus of this paper is to examine and categorise the different types of information that a single shard can provide not just to the trained archaeologist but also to the general public. To the archaeologist, a single shard is generally considered to be useless in any kind of scientific approach. But really, how much data can one shard provide?

When we analyze pottery we tend to look at specific aspects regarding the context of discovery, shape, size, decoration, surface treatment, paste composition, firing environment, *chaîne opératoire* etc. All these taken separately give a small amount of information about the person and people who created them. Combine them together, and you get a pretty good picture of the community that these people lived in.

We will take one shard, examine it through multiple perspectives, and try to see the people behind it, the people that created and used the pot.

*This work was supported by a grant of the Romanian National Authority for Scientific Research, CNCS – UEFISCDI, project number PN-II-ID-PCE-2011-3-1015.*

### **A46.04-P-1: Comprehensive analysis of the Early Metal Age pottery from Kola Peninsula: preliminary results**

by **Anton Murashkin** (*Saint-Petersburg State University, Russian Federation*)

Ceramics is an abundant archaeological material, and its study can solve problems related to the genesis, development, interaction of archaeological cultures, as well as their chronology and periodization. Collection of Early Metal Age ceramics from Murmansk region includes several thousand fragments from about 650 pots. Pottery of this period is

very diverse in terms of technology, morphology of vessels, and ornamentation.

Basing on the traditional typological analysis, A. Zhulnikov (2006) identified eight types of ceramics and concluded that they were partly coexisting as well as replacing each other during the III-I millennium BC. Their chronology was based on analogies with the territory of Karelia, Finland and northern Norway, but was not supported by the results of radiocarbon dating of sites from Kola Peninsula.

With the help of geological and mineralogical methods we were able to trace the specific technological features (composition of clays and mixtures, the nature of the firing) of certain types of ceramics. To clarify the pottery chronology a series of radiocarbon dating of crust were made.

The reported study was partially supported by RFBR, research project No12-06-31075 mol\_a.

#### **A46.05-P-1: Employing a chaîne opératoire approach to the distribution of Early Bronze Age 'bowl tradition pottery'**

by **Ros O Maolduin** (NUI Galway, Ireland)

The geographical distribution of pottery forms were once equated to 'cultures'. However, complex overlapping patterns of object types clearly indicate that such correlations were over simplistic and most archaeologists now understand that cultures were and are not homogenous bounded entities. One alternative is to view these distributions as overlapping 'communities of practice' and this concept can be extended, through employing a *chaîne opératoire* approach, to exploring the distribution of practices within pottery traditions. One basic division that can be drawn is between the construction of a pot and its decoration. Learning the former is likely to have involved deeply embodied non-discursive knowledge, while the latter may have been easily copied, but may also have lent itself to a conscious deployment, and/or manipulation, of symbols.

Bowl tradition pottery, an Irish/Scottish Early Bronze Age ceramic form, is a well catalogued and closely dated assemblage, and therefore represents a good opportunity to attempt such an approach. This paper will examine the distribution of different practices involved in its *chaîne opératoire* and some overlaps with other practices and/or aspects of material culture. It aims to extract an understanding of the exchanges that occurred within and between Early Bronze Age Ireland and Scotland.

#### **A46.06-P-1: New cognitions of combination of typological, technological and radio-carbon analysis of Neolithic ceramics in the Volga-Kama Region**

by **Aleksander Vybornov** (Samara State Academy of Social Sciences and Humanities, Russian Federation), **Irina Vasil'yeva** (Samara State Academy of Social Sciences and Humanities, Russian Federation)

Many stands in Volga-Kama region have ceramics of different types. Some researchers speak about coexistence and correlation of ancient population. That can be an automatic blending of different time and culture artifacts. Others claim that Neolithic communities were exclusive. Typological, technological and radiocarbon analysis of ceramics were used to solve this problem. Two different ceramic groups were singled out in Prikamye. Tattooed one is made of oozy clay with organics. Pectinated one is made of clay with chamotte. They are dated according to V. Skripkin and N. Kovalyukh's methodics at stands with both types of ceramics. Dates on ceramics were checked on crust at AMS. In Lower Prikamye tattooed ceramics is dated 6300BP and pectinated one -6300BP. That proved their synchronism. Technological analysis of Neolithic ceramics (A. Bobrinsky's methodics) of this region showed that in most cases tattooed ceramics is made according to the pectinated ware recipe. And vice versa. At stands of different cultural levels system use of typological, technological and radiocarbon analysis of ceramics makes it possible to 1. indicate the synchronism of different culture complexes; 2. indicate their correlation. The hypothesis about culture level blending of most Neolithic stands in Volga-Kama Region and exclusiveness of Neolithic communities are not proved.

## B: Archaeological Heritage Resource Management

### Session B01

#### Adding technology: the multidisciplinary study of historical buildings

Saturday, 7 September 2013, 14:00–18:30

Room: UU 108 (Building 2, ground floor)

**Organisers:** **Lília Basílio** (iDryas / Dryas Octopetala, Portugal), **Ioan Marian Tiplic** (University of Sibiu, Romania), **Miguel Almeida** (Morph / Dryas Octopetala, Portugal), **Jorge Dinis** (Universidade de Coimbra, Portugal) and **Giuseppe Stella** (iDryas / Dryas Octopetala, Portugal)

The role of Archaeology in the safeguard of historic towns has been recognized and established in several normative international documents dedicated to the preservation and management of cultural heritage. Archaeology has been ascribed, and positively accomplished, an important responsibility in the process: to recover and study the buried remains of the towns' multiple pasts.

However, Archaeology's potential to produce relevant information to document the urban centers' history is yet to be fully explored through its application to standing structures. In fact, having been successively occupied throughout time and continuously adapted, historical buildings result in complex layered structures, i.e. stratified objects, adequate for archaeological approach.

Consequently, prospective methodological research regarding the study of historical buildings should combine:

- the thorough analysis of all existing historical documentation
- recording the architectural, stylistic and constructive information of the building
- developing and implementing systematic sampling and protocols for the characterization of building materials and techniques (including new dating procedures)
- recovering the building's diachronic evolution through stratigraphic analysis
- incorporating state-of-the-art technologies (such as laser scanning, photogrammetry, geo-radar, micro-resistivity, thermography, etc.) for structure analysis and documentation and
- developing new interpretative skills based on innovative tools such as virtual reality, augmented reality and BIM technologies

The goal of the virtual reconstruction of historical monuments using archeological and architectural data, then the animation of the model is to provide many possibilities in reexamining the building and to be observed from different angles, "flying" in time and space throughout the medieval monument, and to offer a better understanding of a sequence of the transformation and the changes of the monument during the centuries.

Resulting methodological protocols should be based on the principle of approaching buildings as irreplaceable documents for the construction of knowledge regarding past urbanism and the history of architecture, engineering and the urban centers themselves. Particular attention should be accorded to the analysis of civil architecture within preventive and emergency projects.

The innovative potential of such multidisciplinary perspectives, necessarily combining the work of archaeologists, art historians, geologists, physicians, computer scientists and others concerns:

- the quality of the recovery of relevant historical information from standing buildings
- the study and dating of ancient construction techniques and characterization of used building materials
- the potential impact on reconstruction projects and management of historical urban areas; and, finally
- the dissemination of information to a broader public

#### **B01.01: Learning from buildings: interdisciplinary approaches to historical buildings analysis.**

by **Lília Basílio** (Dryas Arqueologia, Portugal), **Jorge Dinis** (Universidade de Coimbra, Portugal), **Giuseppe Stella** (Dryas Arqueologia, Portugal), **Humberto Varum** (Universidade de Aveiro, Portugal), **Manuel Senos Matias** (Universidade de Aveiro, Portugal), **Hugo Correia** (Dryas Arqueologia, Portugal), **Hélder Santos** (Dryas Arqueologia, Portugal), **Nuno Barraca** (Dryas Arqueologia, Portugal), **Nuno Cortês** (Morph, Portugal), **Luís Café** (Universidade de Aveiro, Portugal)

Working within a multidisciplinary team – integrating archaeologists, geologists, physicists, ICT scientists geographical and geological engineers -, Dryas has been developing and testing different techniques and methods to address the complexity of historic building's characterization studies. The aim is to define field and laboratory protocols able to

produce a deeper understating of any historical structure, through its direct analysis. Also, to promote the use of systematic recording procedures and characterization studies which allow the production of knowledge regarding the building under analysis, but also contribute to further enhance our knowledge regarding the history of construction, architecture and urbanism.

During this work some issues where given particular relevance: the integration of different areas of knowledge since the planning stage, through all phases of execution; the use of accurate, adaptable and time-saving recording procedures; the application of non-intrusive characterization techniques; testing of dating methods and procedures; management, dissemination and presentation of information relevant for the project.

From working examples developed within different contexts of intervention – contract archaeology projects, rehabilitation projects, laboratory and field research – the paper aims at the presentation of the different integrated solutions and interdisciplinary protocols that this multidisciplinary work group has been developing.

#### **B01.02: Multidisciplinary experience to study same cases of reuse of Tuscany architectural heritage**

by ***Eliana Siotto*** (National Research Council, Italy), ***Laura Benassi*** (Scuola Normale Superiore, Italy), ***Alice Parri*** (Scuola Normale Superiore, Italy), ***Marco Callieri*** (National Research Council, Italy), ***Paolo Pingi*** (National Research Council, Italy), ***Denise La Monica*** (Scuola Normale Superiore, Italy), ***Roberto Scopigno*** (National Research Council, Italy)

A common problem concerning the Italian architectural heritage is the reuse of historical buildings, occupied throughout time and continuously adapted for new tasks. The result of this process is the consolidation in time of complex layered structures. By means of a multidisciplinary approach we support the study and comprehension task with historical and technical documentation that must be immediately available to professional workers and that can be integrated and presented with new technologies. In particular the technologies investigated are: a web database to manage the documentation of historical archives; 2D and 3D digitalization modalities to create virtual reconstructions and three-dimensional models that allow to map the current status and to use the archaeological and architectural data to better understand the sequence of transformations of the monuments during the centuries; effective tools for scientific and touristic visual communication of these integrated information. The goals of this paper are to show our multidisciplinary methodological experience and the technological instruments chosen to enable the production of 2D and 3D digital data for the documentation and dissemination of the results to a broad public, either experts or common users. Several case studies from the Tuscany ArTeSalVa project will be used to demonstrate our approach effectiveness.

#### **B01.03: Ruins of the castle in Iłża – spatial measurements and modern stratigraphy in archaeological and architectural research**

by ***Rafał Zapłata*** (Cardinal Stefan Wyszyński University in Warsaw, Poland)

The aim of this paper is to discuss chosen issues connected with terrestrial laser measurements of heritage sites and new possibilities of documentation and interpretation in archaeological and architectural research. Selected aspects of terrestrial laser scanning and photogrammetry will be presented on the example of research carried out at the castle in Iłża, Masovia. The castle of the archbishops of Kraków in Iłża, built in the 14<sup>th</sup> century, was subject to 3D measurements, the results of which are presented in the form of registered data and spatial models. Those results create a basis for modern documentation and simultaneously a starting point for further analyses about the state of preservation of heritage structures and about modern stratigraphy of standing structures (for example the analysis of the intensity of laser light reflection). This paper is focused on methodological issues and discusses hitherto gathered experience and recommendation concerning the technological conditions and the use of remote sensing in field research. The paper presents results of implementing laser scanning and photogrammetry in field documentation and stratigraphic analyses and the results of tests carried as part of research. The focus points of this paper are: archaeological and architectural research, modern stratigraphy, intensity, scanning and photogrammetry.

#### **B01.04: Multilayered Approach to Archaeological Research in the Urban Environment – Case Study: Siscia**

by ***Ina Miloglav*** (University of Zagreb, Faculty of Humanities and Social Sciences, Croatia), ***Tanja Lolić*** (Ministry of Culture of the Republic of Croatia, Croatia), ***Rajna Šošić Klindžić*** (University of Zagreb, Faculty of Humanities and Social Sciences, Croatia)

The complex architectural history, surface and underground infrastructure of modern towns demand suitably adjusted strategy for archeological and geophysical research. The select examples, more or less successfully open »time windows« through the modern urban tissue to the remains of Roman town of Siscia.

*Siscia* is located in the south-west part of the Pannonian plains, beneath the old centre of today's town of Sisak. Founded for strategic reasons, *Siscia* developed into a strong military, economic, political and spiritual centre of the Roman province Pannonia.

As the modern Sisak developed directly on the remains of *Siscia*, the site is continuously and seriously under risk due to construction work for the current and future needs of a contemporary town.

During archaeological excavation, which continuously lasts from 2003, at the north part of *Siscia* multilayered stratigraphic picture is defined – from the oldest phase in 1<sup>st</sup> century to the baroque church of St. Quirinus.

Archaeological and geophysical research has confirmed that the area of St. Quirinus with the remains of public buildings, monumental city gate, street pattern and parts of the city wall is considered an ideal example of developed Roman urbanism to be presented to the public as an open Archaeological park.

#### **B01.05: 2ArchIS – Information System of the Unidade de Arqueologia da Universidade do Minho**

by Natália Botica (*Universidade do Minho, Portugal*)

The 2ArchIS Information System developed at the Archaeology Unit of the University of Minho (UAUM) was carefully designed to incorporate information resulting from the survey, register and study of the archaeological process.

Information from archaeological and architectural heritage was structured to achieve two main goals: provide detailed record of heritage for memory for the future and enhance the management of that information. The fulfillment of these goals will improve the research and the dissemination of results.

This article mirrors the process of gathering and registering information, using a backoffice application. This application allows the users to store alphanumeric information and perform cross-information with vector, graphic and cartographic data. It is an essential safeguard of information and an important tool to facilitate the analysis and the linking of data. The information structure will be presented as well as the designed forms, developed according to the methodology of survey and archaeological record, and passed into the process of information rationalization and standardization.

The *Back Office* and the *Front Office* applications developed at the UAUM provides the access to information in a dynamic, structured and simplified way, both to researchers and public in general.

#### **B01.06: The Medieval Ecclesiastical Architecture from south Transylvania: Archeology, Architecture and Informatics (ArhIn)**

by Maria Emilia Tiplic (*The Institute of Socio-Human Research, Romania*), Radu Cretulescu (*"Lucian Blaga" University, Romania*), Ioan Marian Tiplic (*"Lucian Blaga" University, Romania*)

The first part of the paper will be focused on an overview of the current medieval cultural heritage from Transylvania and its management & research, a presentation of a project regarding the research of 150 medieval churches from south Transylvania (including the churches of the medieval towns) and the creating both a data base for this kind of cultural heritage (which will comprise historical documentation, archaeological data, architectural data, the features of the building material, current liturgical inventory etc.) and a digital interface of the project (web portal ArhIn). In the second part of the paper we will present a form of information dissemination such as virtual reality and 3d computer graphics in reconstructing the different phases of a medieval church, and the importance of the virtual reality in medieval archaeology and architecture from Transylvania. In conclusion, we will point out the potential impact of the whole project for Romania and for the east-central Europe.

#### **B01.07: Unraveling the 3D Cultural Landscape within a Tablet Interface**

by Gregory MacNeil (*Jerry MacNeil Architects Limited, Canada*), Sara Beanlands (*Boreas Heritage Consulting Inc., Canada*)

The Thibodeau 2 Site, a multi-component site within the community of Poplar Grove, Nova Scotia, Canada represents a cultural landscape modeling case study. The site is situated within a large dairy farm, whose owner is a direct descendent of the Planter family granted the land in 1760. The material remains preserved in the landscape are that of the Thibodeau Village, a pre-deportation Acadian community that settled in the late seventeenth century. Based on the subsurface features Archaeological investigations began in 2012.

The “Metric Survey” and the exploration utilized image and non-imaged based technologies that included hand survey, REDM total station, real time direct to CAD software, GPR, close range photogrammetry, Lidar, aerial photography, EM38, BIM, and BEM.

Virtual 3D models were constructed of buildings both formally and presently associated with the site including their time specific landscapes, thus providing a heads-up venue through applications such as BIMX that can be uploaded to Apple and Android smart devices for natural, game-like exploration of the archeological and architectural research in real-time.

Technologies from the intersecting professions of archeology and architecture were incorporated thereby adding to Cultural Landscape terms “research related” and “planning related” a new cyber vantage point called “now”.

#### **B01.08: Crossing data between luminescence dating, characterization techniques and archaeological survey: in search of the chronological memory of Historical Buildings**

by **Giuseppe Stella** (University of Coimbra, Portugal), **Luis Almeida** (University of Lisbon, Portugal), **Lilia Basilio** (Dryas Octopetala, Portugal), **Dorotea Fontana** (University of Palermo, Italy), **Mónica Corga** (Dryas Octopetala, Portugal), **Jorge Dinis** (University of Coimbra, Portugal), **Sebastiano Olindo Troja** (University of Catania & INFN Sezione di Catania, Italy), **Miguel Almeida** (Dryas Octopetala, Portugal)

Radiometric dating of buildings by stimulated luminescence is currently based on Thermal (TL) and/or Optically Stimulated Luminescence (OSL) of bricks. Still, radiometric dating of bricks may fail to establish the chronology of construction, or construction sequences through time, when ceramic materials were reused.

In order to overcome this problem, studies for dating historical mortars through OSL have been developed with good results. Still, attaining dates with relative errors below 5% persists as a main target within this approach.

This issue – particularly relevant for dating recent constructions or buildings with multiple construction phases in a short period may be overcome through integrated projects using dating techniques, historical-constructive assessments of the buildings, and different techniques providing information about composition and manufacture procedure of the mortars. This presentation shows the results of a multidisciplinary study that led to the definition of a chronological sequence for the different construction phases of *Convento de S. Francisco (monastery of St. Francis, Coimbra, Portugal)* through archaeological analysis of the building, different dating methods (TL for brick and OSL for mortar), mineralogical data and colorimetric characterization.

#### **B01.09: Meaning and technology in buildings rehabilitation: Inovadomus as a test site for interdisciplinary procedures to the study of historical buildings.**

by **Miguel Almeida** (Dryas arqueologia, Portugal), **Humberto Varum** (Universidade de Aveiro, Portugal), **Manuel Senos Matias** (Universidade de Aveiro, Portugal), **Nuno Barraca** (Dryas arqueologia, Portugal), **Helder Santos** (Dryas arqueologia, Portugal), **Luis Café** (Universidade de Aveiro, Portugal), **Fernando Almeida** (Universidade de Aveiro, Portugal)

During the last decades, considerable number of new technologies and methodological procedures originally from diverse scientific fields have significantly increased our potential to rehabilitate buildings.

These developments are particularly relevant in the case of historical buildings, public or civil, as these frequently consist of complex objects, to which long occupational histories imposed a succession of structural reforms, plan arrangements, circulation changes, aesthetic reforms, coating layers, etc.

The challenge for researchers involved in nowadays projects of rehabilitation is to fully exploit these enhanced technologies and methods to efficiently retrieve the information contained in the object to restore.

The effective response to this challenge, often requiring a balanced participation of various scientific fields (civil engineering, architecture, history, archeology of the building, geomatics, photogrammetry, geophysical, engineering materials, etc..) is crucial to the success of each rehabilitation project.

In collaboration with the University of Aveiro, Dryas is developing a set of procedures for the diagnosis and documentation, aiming to combine those multidisciplinary approaches in a structured protocol for the characterization of the studied buildings.

As Inovadomus, also devoted to develop guidelines for building rehabilitation, offered an excellent field test for these procedures, as the three institutions collaborate in the rehabilitation Inovadomus headquarters.

## Session B02

### Archaeological Sites in Forests – Strategies for their Protection

Thursday, 5 September 2013, 08:30–13:00

Room: EU 109 (Building 1, ground floor)

**Organisers:** **Grietje Suhr** (Independent Scholar, Germany), **Walter Irlinger** (Bavarian State Conservation Office, Germany), **Jan John** (University of South Bohemia, Czech Republic) and **Ondřej Chvojka** (University of South Bohemia, Czech Republic)

Forests are rich in prehistoric and historic monuments. To protect this cultural heritage, an intensified cooperation of Heritage Conservation and authorities of Forest Administration has been established in many European countries during the last decade. This session aims at summarizing what has been reached up to now. Contributions should concentrate on questions as: How are data on this special kind of monuments collected and stored? How are they documented and/or mapped? Which concepts exist for the preservation and care of prehistoric and historic monuments in woodland? How is the cooperation between Heritage Conservation and Forest Authorities organized? Contributions should preferably summarize both the perspectives of Heritage Conservation and Forest Administration.

Most welcome are also contributions concerning the adaptation of woodland to climatic changes, the analysis of data collected by Airborne Laser Scans (ALS) and on public relations concerning archaeological monuments in forested areas.

#### **B02.01: Values of the wilderness. Positive experiences on cooperation between archaeology and forestry in Finland.**

by **Vesa Laulumaa** (*The National Board of Antiquities, Finland*), **Satu Koivisto** (*The National Board of Antiquities, Finland*)

Finland is one of the most forested countries in the world and circa 60 % of its cultural heritage sites are situated in forests. A large number of those sites was damaged or destroyed by modern mechanised forestry before any actions were taken to prevent further harm. Since the cooperation of cultural heritage management and forestry started a decade ago, many things have improved but there is still work to be done.

One of the major initiatives to improve cooperation has been the EU-funded SKAIK-project (Skogens Kulturarv i Kvarkenregionen, Forests Cultural Heritage on the Kvarkenregion). Its main goal is to reduce damages on cultural heritage sites in forests and to enhance cooperation between cultural heritage management and forestry.

The project has been going on for three years now and it is time to evaluate its achievements. In this paper several activities of the project will be summarized and discussed. These include:

- archaeological survey methods and documentation of data
- professional cooperation with forestry
- education of forestry professionals, teachers and students
- informing private forest owners
- community archaeology

Some future prospects of collaboration will also be shortly discussed.

#### **B02.02: Shifting up a Gear – A Progress Report for Finland's National Forest Programme 2015 Cultural Heritage Project**

by **Riikka Mustonen** (*Metsähallitus, Finland*)

The NFP 2015 Cultural Heritage Project is the largest archaeological survey project ever carried out in Finland. The project goal is to survey all state-owned commercial forests by the year 2015. The project has been running smoothly for four years. This year we shifted up a gear to see if there was something else we could accomplish. We focused on the documentation process by testing a new tablet model on field conditions. We also looked for new ways to make our GIS software package work for us to make the documentation process even easier and more functional. For the first time we used the data collected by Airborne Laser Scans on a large scale. On the other hand we put focus on human relations. We presented our work in the social media, we held an information evening to the public and an education day for the forest workers; just to mention a few. We have been successful in building up some cooperation between us and the forest authorities in order to protect the cultural heritage. It is important to show the authorities why we are important and why we are needed also in the future after the project has ended.

### **B02.03: Neglected cultural heritage in Norwegian forests – state of affairs, challenges and solutions**

by **Ole Risbøl** (NIKU – The Norwegian Institute for Cultural Heritage Research, Norway)

Knowledge and awareness about the presence of cultural heritage in the different parts of landscape is biased. In Norway, a comprehensive exploitation of a wide range of out-field resources has resulted in the existence of a very large number of cultural remains and versatile traces from human activity throughout all periods of history. A large part of these activities was carried out in forest areas – grazing, iron production, animal catching etc. – but due to a combination of a range of different circumstances, these remains often don't get the same attention as cultural heritage in other parts of the landscape. This is despite of the importance of these production modes in the history of the development of the Norwegian society. This causes implications for landscape management and understanding and consequently influences the awareness and protection of cultural remains in forests. This paper will focus on challenges connected to the management of cultural heritage in forests from a Norwegian perspective and finalize with a touch on LiDAR as an approaching improvement of the situation.

### **B02.04: The protection of archaeological heritage in forests – the Dutch approach**

by **Michel Vorenhout** (Archeologische Monumentenwacht Nederland, The Netherlands), **Robert Timmer** (Staatsbosbeheer, The Netherlands)

The Dutch "Archeologische Monumentenwacht" (AMW) is a non-profit organization that helps owners to protect their archaeological monuments. The Dutch State Forestry service (SBB) owns 260.000 hectares of forests and circa 1400 archaeological monuments therein. SBB has signed a pact with the Dutch Cultural heritage agency on the management of their cultural heritage. This paper discusses the way these Dutch organizations work together, with the focus on the practical, hands-on approach by AMW. This approach to conservation advice strongly values the direct contact with the local forest manager. The approach starts with a short description of the archaeology present, a field inspection and subsequently a list of things to do and to prevent: where can you drive, which tree should be saved and which monument is too damaged to warrant extra actions? Observations are stored in a GIS database. This data is combined and used for national monitoring by the Heritage Agency. AMW provides feedback to the Heritage Agency, increasing the efficiency of protective measures and plans.

Meanwhile, hundreds of archaeological monuments have been inspected, described and protective measures have been taken. Starting soon, the AMW will deliver their results directly to the GIS management system of SBB, improving the visibility of actions needed.

### **B02.05: Tools for Detection – The Prospection of Archaeological Sites using LiDAR in Finnish Boreal Forests**

by **Satu Koivisto** (National Board of Antiquities, Finland), **Vesa Laulumaa** (National Board of Antiquities, Finland)

In recent years, the visual interpretation of digital terrain models (DTM) generated from airborne laser scanning data (ALS) has become a common tool in archaeology for the reconnaissance and measurement of earthwork features. In 2012 the National Land Survey of Finland allocated its laser scanning data available to all users and the open data products have been warmly welcomed by Finnish field archaeologists working in forested areas. The Finnish-Swedish SKAIK-project (Skogens Kulturarv i Kvarkenregionen – The Forests Cultural Heritage in the Kvarken Region) has been systematically testing this set of data in archaeological prospection under thick forest canopy. The lack of information concerning the number and location of archaeological sites in forests has inflicted many damages caused by mechanised forest operations, e.g. thinning, harvesting and forest road construction. This paper addresses the experiences and future prospects of the use of LiDAR in archaeological prospection in a country known for its intensive forestry.

### **B02.06: Between archaeology and forestry – chosen aspects of Airborne Laser Scanning (ALS)**

by **Rafał Zapłata** (Cardinal Stefan Wyszyński University in Warsaw, Poland)

The paper presents chosen aspects of the implementation of ALS in Polish archaeology and selected examples of the experience gathered during the use of „laser scanning“ in forested areas. The ideas presented here are a result of research carried out for example on the boarder of Świętorzyskie and Mazowieckie voivodships. Most of this research was carried out within a project entitled “The implementation of laser scanning and remote sensing in protection, research and cataloging of cultural heritage. Developing non-invasive digital methods of surveying and documenting architectural and archaeological heritage”.

The focus points of this presentation are: (1) developing strategies and practice of implementing ALS in heritage conservation and forest administration; (2) methodology of gathering ALS data and of measuring or implementing data



from ISOK in archaeological research; (3) methods of storage, management and providing access to ALS data; (4) effects of surveying archaeological and historical heritage and taking survey results into consideration within Plans for Forest Administration; (5) multi-faceted analysis of ALS data in sciences about the past. All issues connected with the implementation of ALS in archaeological research will be analysed through examples of identified cultural heritage sites that radically changed the assessment of forested areas regarding their natural and cultural value.

#### **B02.07: First steps of airborne laser scanning in western Bohemia – opportunity to improve the protection of archaeological monuments in forests?**

by **Jan John** (University of South Bohemia, Czech Republic), **Michal Hejzman** (Czech University of Life Sciences, Czech Republic)

Since 2010 the airborne laser scanning (ALS) data started to be used in the archaeology of western Bohemia, first within a small scale grant project *Potential of archaeological landscape survey in the Czech Republic using 3D airborne laser scanning (LIDAR)*, nowadays the nation-wide scan data of the Czech Republic becoming also available.

There is no doubt that ALS represents one of the most effective methods of cultural/historical landscape survey and documentation, resulting in the precise mapping of known as well as unknown monuments. In the future the results of such mappings may help to protect sites in forested areas, which are vulnerable for example to the use of heavy machinery in forestry. One of the main tasks will be particularly to improve the communication between foresters and archaeologists, which usually do not share information effectively enough.

#### **B02.08: Prospecting, Revealing and Surveying – Tracking down Historical Landscapes and Archaeological Sites in Bavarian Woodlands by Airborne Laserscanning**

by **Hermann Kerscher** (Bavarian State Conservation Office, Germany)

Some two decades back archaeologists and geographers used only two prospection methods to systematically discover archaeological sites and historical landscapes: field survey and prospection by aerial photography. Since both methods reach their limit in woodland we knew up to then only large and well preserved sites in forested areas. This situation changed when newly developed scanning devices which could be mounted to aeroplanes or helicopters arrived on the scene. Very soon this new surveying technique, referred to as Airborne Laserscanning (ALS) or LiDaR, established itself in various professional branches.

By deriving digital 3-D models from ALS raw data we are able to visualize the topography (even the micro topography) of very extended areas in a relatively short time. Since it is possible “to filter away” soil vegetation, buildings etc. by special software algorithms we can “look through the canopy of the forest” directly to the (model-) surface of the ground beneath.

This paper deals with historical landscapes and archaeological sites in Bavarian forests which were revealed in the last few years by airborne laserscanning. Only very few sites can be highlighted, reaching from prehistoric tumuli over ancient/Roman and medieval road and field systems up to relicts of World War II.

#### **B02.09: Historical sites and monuments versus antiquarian practice – examples from archaeological surveys in woodland areas, southern Sweden**

by **Moa Lorentzon** (Jönköpings läns museum, Sweden)

When compared to the traditional site and monument surveys in Sweden (forminnesinventeringen), the last 10 to 15 years of specialised surveys in forests highlight the problem as how historic monuments are brought to light and valued, excavated and studied.

In Sweden the traditional monument survey has mostly been concentrated on prehistoric monuments. In the last 10 to 15 years, specialised surveys in forests have been conducted in several parts of Sweden. There has also been an increase in construction projects in forests, resulting in intensified survey activities. Besides the traditional prehistoric monuments, these surveys have also pointed out and documented historic monuments.

Explanations can be found in an increased antiquarian and academic interest in historic monuments. Parallels may for instance be found in the Swedish discussions concerning urban archaeology and different types of agricultural remains.

However, the increased amount of historic monuments makes it clear that we practically have neither means nor methods to excavate and study them. As a consequence these historic monuments are in most cases still not properly documented, leaving us with a problem when trying to fully understand our past.

#### **B02.10: Archaeological Investigations of the Middle Bronze Age Barrows in Krotoszyn Forest (Southern Great Poland)**

by **Janusz Czebreszuk** (Adam Mickiewicz University in Poznań, Poland), **Mateusz Jaeger** (Adam Mickiewicz University in Poznań, Poland), **Łukasz Pospieszny** (Göteborgs Universitet, Sweden), **Mateusz Cwaliński** (Adam Mickiewicz University in Poznań, Poland), **Jakub Niebieszczański** (Adam Mickiewicz University in Poznań, Poland), **Mateusz Stróżyk** (Poznań Archaeological Museum, Poland)

One of the most important issues in present archaeology is conservation and appropriate management of archaeological heritage. Significant are the objects with their own morphological forms, such as barrows or fortified settlements, which create the cultural dimension of the landscape. Those remains of human activity require specific methods of protection.

Conservation tasks that are mostly taken into consideration in global or continental scale are in fact carried out on regional conditions. This is due to the different development of prehistoric societies and their impact on the natural landscape, specific processes and different traditions of archaeological research.

This presentation is the summary of a regional case study concerning a cultural landscape of the Middle Bronze Age, which is preserved in a circa 150 years old oak forest. The application of various non-invasive methods, including ALS, helped to discover nearly 120 barrows of the tumulus culture.

#### **B02.11: Disturbed Late Hallstatt Period Princely Grave with Two-wheeled Chariot and Bronze Vessels in the Forest Sedlina near Rovná in South Bohemia**

by **Miloslav Chytráček** (Institute of Archaeology of the Academy of Science of the Czech Republic, Prague, v.v.i., Czech Republic), **Ondřej Chvojka** (South Bohemian University of České Budějovice, Czech Republic), **Markus Egg** (Römisch-Germanisches Zentralmuseum, Germany), **Jan John** (South Bohemian University of České Budějovice, Czech Republic), **Jan Michálek** (Czech Republic)

Currently we have registered frequent disturbances of prehistoric tumulus graves in forested areas of South Bohemia. In the forest Sedlina near Rovná (distr. Strakonice) a burial mound from the Iron Age, which was not excavated yet, was illegally disturbed in 2009. From this large tumulus with a diameter of at least 25 m treasure hunters dug out the unique assemblage of five bronze vessels of the Late Hallstatt Period. We decided to respond to this situation – which is singular in South Bohemia – within the framework of a project of the Academy of Science of the Czech Republic based on collaboration with the Römisch-Germanisches Zentralmuseum Mainz (Germany). The complete archaeological excavation made the documentation of the distribution of grave goods within the rectangular central grave chamber (6,2 x 6,1 m) possible. A robber trench from the late La Tène Period, which disturbed the inhumation burial in the south-western part of the chamber, was also documented. The northern part of the timber chamber was intact and in its north-western corner a small two-wheeled chariot was preserved. The complex excavation of this burial mound with the use of numerous scientific analyzes showed the potential of these methods for the rescue of information from disturbed archaeological monuments in a forested landscape.

#### **B02.12: Archaeology and history of forest. Approaches to study medieval, modern and contemporary past monuments in woodland environment of South Bohemia and conceptual design of heritage protection.**

by **Ladislav Čapek** (University of West Bohemia, Czech Republic)

Woodland environment preserves a multi-layered memory of the past in the form of deserted landscape in perspective of historical long time period (longue durée). Traces of deserted landscape are created by palimpsests of relief forms of prehistoric, medieval and modern monuments that can be documented by the current method of archaeological prospection and landscape archaeology. This case study is focused on three diverse woodland areas in South Bohemia (deer-parks Stará a Nová Obora, Velechvín forest district) with large number of archaeological monuments and sites. While prehistoric monuments (hillforts, burial mounds) in this woodland areas are relatively well mapped, less known are the remains of the deserted medieval and modern settlement network (e.g. deserted villages, mansions, farmyards) with their hinterland (field systems, ponds, communications) and other remains of the activities related to the use and exploitation of the forest in the past (e.g. woodland crafts, mining and quarrying). Their systematic archaeological research is based on non-destructive field and geodetic-topographic survey and airborne laser scanning (LiDAR). Precise and detailed documentation will be used as model example for conceptual design of heritage protection of this unique parts of deserted landscape.

## POSTERS

### B02.01-P-1: A system of medieval structures in the Harz Mountains

by Anna Swieder (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany)

Since 2010 the State Office for Heritage Management and Archaeology Saxony-Anhalt (Germany) is able to purchase LiDAR data for different regions of interest.

One of these areas are the Harz Mountains which are covered by forests up to 60 %. For this region a 2,160 km<sup>2</sup> large DTM was generated. This is the basis for further investigations on archaeological and historical features covered by trees. Until now it was possible to identify and digitalize more than 1000 archaeological sites. Some had already been discovered by systematic field surveys, others have been detected during the ongoing systematic analyses of the DTM. Particularly the emerging network of medieval settlement and economic structures seems to open a very promising field of research. Among others, hill forts, deserted villages, ridge and furrow, mine shafts and pits, charcoal kilns, defensive dikes and water reservoirs, dams and ditches which are often integrated in a system of roads and lanes, could be identified. Pre- and early historic earthworks and burial mounds are represented, too.

At first, all monuments are going to be digitalized and then will be analysed and interpreted. Eventually, it is planned to develop preservation strategies for these monuments in cooperation with the forestry offices.

### B02.02-P-1: Archaeology or forestry? Do we really need to choose? Case study from lowland woodland Tvoříhrázký les in Czech Republic

by Klára Šabatová (Masaryk University, Czech Republic), Richard Bříško (Masaryk University, Czech Republic), Jan Kolář (Masaryk University, Czech Republic), Barbora Machová (Masaryk University, Czech Republic), Jan Petřík (Masaryk University, Czech Republic)

It is well known among archaeologists that prehistoric monuments covered by wood are much better preserved than those in open, mostly arable landscapes. However, as extensive use of heavy machinery in forestry was widespread, especially following WWII, more monuments which survived nearly untouched until the present or recent past are being heavily damaged or even lost. As forest covers around 30 % of Central Europe, the potential for preservation of archaeological monuments is very high – and this is especially true in lowland areas which were densely inhabited throughout the past. The main aim of this poster is to present and discuss an example of good cooperation between academic archaeologists and local forestry managers in the area of Tvoříhrázký les. This cooperation led to an increase of archaeological evidence, better knowledge about the prehistoric population and vegetation dynamics, and significant improvement in commonly used forestry techniques on archaeological sites. To sum up our approach: The better the understanding of the landscape history is – the better heritage management is.

### B02.03-P-1: The use of LiDAR to detect and map archaeological features in Lithuanian woodland environment

by Linas Tamulynas (Vilnius University, Lithuania), Vaidotas Suncovas (Vilnius University, Lithuania), Algirdas Skrupskelis (Centre of Cultural Heritage, Lithuania), Gytis Grižas (Lithuanian National Museum, Lithuania), Ignas Vaicekauskas (Vilnius University, Lithuania)

**Main goals:** The main goal of this research was discovery, interpretation, mapping and visualization of Lithuanian archaeological sites in woodland environment using airborne LiDAR data.

**Sample:** We employed different classic target features that can be detected and manipulated using available LiDAR resolution: burial mounds, hillforts, historical defensive remains and military objects.

**Methods:** Forested areas where some sources of information about the possible archaeological features have been known but the exact location was absent were desktop surveyed using LiDAR data. Different DEM visualisation techniques (hill-shading, multiple azimuth hill-shading, principal component analysis, slope analysis, solar radiation) were applied in GIS (ArcGIS) environment to extract the most sufficient visibility. Some of the sites were confirmed in the field.

**Results:** Several groups of burial mounds which have been discovered during the first half of the 20th c. but for unknown reasons were not included into Lithuanian Cultural Heritage Registry were detected using LiDAR data. Previous archaeological maps and protected areas were also corrected and the new features (burial mounds and historical military objects) recorded for the first time.

**Conclusions:** Although LiDAR proved to be a viable method for archaeological feature detection, its capabilities still depend on the scanning resolution and vegetation canopy.

## Session B03

### Archaeology and cultural heritage during and after armed conflict

**Saturday, 7 September 2013, 14:00–18:30**

**Room:** EU 104 (Building 1, ground floor)

**Organisers:** **Emily O'Dell** (American University of Beirut, Lebanon), **Britt Baillie** (University of Cambridge, UK) and **Tera Pruitt** (University of California, Los Angeles, USA)

This session discusses archaeology and cultural heritage in the context of armed conflict, revolution, occupation and drone warfare in the 21st century. It seeks to disentangle the way that heritage is impacted during and after the rupture of conflict. This session is divided into two sections.

**Section 1: Impact and Ownership of Heritage During Armed Conflict** This section considers how cultural heritage during times of armed conflict becomes ensnared in a web of hostilities that threatens not only its preservation but its very existence. We ask, in times of violent political rupture and chaotic social upheaval in the 21st century, how has material culture been used as a weapon, and how has it suffered as a 'victim'/target? In a post-ownership world, what claims do foreign governments, international cultural organisations, archaeologists, and religious scholars make to heritage sites to save them from destruction, and on what grounds? To what audiences and by what media do archaeologists attempt to explain conflict, the necessity of preservation, and whether or not their roles must change during times of armed conflict from preservers to protectors?

**Section 2: Re-Imagining Heritage After Conflict** When the violent conflict ceases, can we disentangle the way that the past, present and future of heritage is changed or re-imagined? What role does 'orphaned heritage' play for the 'new' communities that live around these sites today? How can heritage interpretation in tense post-war 'transition periods' move beyond reified ethnic categories like 'perpetrator/victim' to more nuanced understandings of identity and roles such as: collaborators, boundary crossers, bystanders and witnesses? How have forms of alternative heritage such as pseudoscientific pyramids, memorials of pop-cultural icons become popular? How are the needs of war tourists shaping the 'post conflict' 'heritage package'? How are technology and media being used as tools to (re)fashion heritage and offer counter-narratives?

#### **B03.01: Archaeology and civil war: The case of the Syrian metropolis Aleppo**

by **Kay Kohlmeyer** (HTW Berlin University of Applied Sciences, Germany)

Civil wars threaten cultural heritage of urban centres and rural districts in different ways: public awareness concentrates mainly on key sites of symbolic or established touristic importance. In our case, we will be discussing the famous Islamic buildings of Aleppo, and touching upon archaeological sites such as the Temple of the Storm God and endangered archaeological sites in the countryside, which are often targets of military destruction, looting and illegal settlements. The potential loss of these sites means would result in a cease of information about the hinterland, thus putting a halt to understanding the emergence and existence of the urban centre itself.

Heritage control and protection during civil war is more or less impossible due to fighting, and the consequent exodus of professionals and committed civilians. The lawless conditions which promote destruction of the archaeological heritage continue and sometimes even cumulate after the war, when heritage supervision by professionals is nonexistent or too weak to influence the process of recovery.

This contribution tries to give some suggestions on how to support the responsible authorities and the community in protecting their heritage as an archive of identity in the city itself and in its surroundings.

#### **B03.02: Urban archaeology and cultural heritage during armed conflict**

by **Caroline A. Sandes** (Independent Researcher, UK)

Given the tendency for armed conflict to be fought in urban areas—despite the Hague and Geneva Conventions' attempts to protect it—urban cultural heritage is particularly vulnerable to destruction. This destruction comes in three forms: collateral damage; deliberate destruction as a means of undermining the enemy and/or pre-existing communities (in its worst form urbicide); and deliberate destruction as a means of clearing land for redevelopment—using conflict damage as an excuse.

This paper will examine these main forms of destruction, taking into account urban warfare tactics; sovereign, civil and civic conflicts; and neoliberal development practices. It will also highlight the political violence inherent in such destruction and the links between political violence, urbicide and potentially genocide.

Given these complications, how do we protect urban cultural heritage when it is so often in the firing line, and how do we maximize its protection both during and after conflict? How can we explain the paradox that those intent on destroying cultural heritage and all that it signifies seem more aware of its importance than those concerned with protecting/aiding the communities inflicted? This paper will examine these questions by taking into account the major threats to heritage and the larger socio-political nature of such destruction.

### **B03.03: Denying facts on the ground, national and international responsibilities to protect the cross border cultural landscape of Battir, Palestine (and Israel)**

by *Giovanni Fontana Antonelli* (UNESCO, Italy)

This paper deals with the protection of the cultural landscape of Battir, a Palestinian village situated on the Green Line, which separates Israel from the West Bank. Internationally recognized in 2011 by the awarding of the “Melina Mercouri Prize” (its World Heritage nomination is on going), Battir lies around seven kilometers southwest of the Old City of Jerusalem, with which it was historically linked until 1948 through the Ottoman-British Railway.

The first part of this paper investigates the threats affecting the site whose outstanding terraced landscape, dating back to the pre-Roman era, stretches throughout its territory and partially across the Green Line. Today it is menaced by several factors linked to the on-going conflict, such as the imminent construction of the Separation Barrier, and the expansion of Israeli colonial settlements. If implemented (the verdict of the Israeli Supreme Court is pending), the barrier will determine the destruction of the most sensitive terraces and the *enclavisation* of the area.

The second part of this paper deals with the responsibilities of both national and international stakeholders, notably the State of Israel, the Palestinian Authority (State of Palestine) and UNESCO in effectively protecting this potential World Heritage site from irreversible damage and permanent loss.

### **B03.04: The Fate of Chechen Heritage during and after the Wars**

by *Marta Lorenzon* (Columbia University, Italy)

This paper will address the destruction of cultural heritage during the the Chechen Wars. I will analyze the reasons why Chechen heritage was destroyed, how such destruction affected the culture (which replicated that same lost heritage), and the coping mechanisms which developed in the intense post-war "transition period." The choice of Chechnya as case study has been made after considering the spare sources at our disposal and the objective disinters of media and preservation organizations in dealing with heritage that emerged from ten years of conflict. Despite the fact that the 1954 Hague Convention states that cultural property must be protected before and during armed conflict, the actual protection and recovery of cultural heritage has proved weak during and after the many years of the Chechen Wars. This conflict thrived on the politicization and ethnicization of cultural identity, with subsequent blatant and insidious assaults on cultural heritage and archaeological sites. Just as destruction of cultural property may be the vehicle of conflict, so it is the continuing thread of cultural behavior and traditions that provides the basis for reconciliation and recovery. This is why the recovery of cultural heritage should be central and not peripheral to postwar reconstruction.

### **B03.05: Mleeta: An Archaeology of Terror or an Archaeology of War?**

by *Emily O'Dell* (American University of Beirut, Lebanon)

This paper will analyze the objects of war on display at the museum of Hezbollah in southern Lebanon. By using the Mleeta Museum as an example, we will discuss how archaeologies of war are displayed, articulated and advertised. We will also investigate how objects from war may be repositioned as objects of art. Now that the military wing of Hezbollah has been deemed a terrorist organization by the EU, we will additionally consider whether or not this new designation frames the museum as a space of terror, and question how we might excavate and display archaeologies of “terror.”

**B03.06: Archaeology and cultural heritage management in Ile-Ife, Southwestern Nigeria**

by **B. Adisa Ogunfolakan** (*Obafemi Awolowo University, Nigeria*)

A recent impact assessment carried out on the sacred, historical and cultural landscape of Ile-Ife, Southwestern Nigeria shows that the heritage sites are in a deplorable state, as a result of series of several factors.

This paper therefore examines these factors, which include: the quest for ancient Ife art works by the western world, the influence of foreign religions and the socio-political and economic crisis, and the urbanization of the ancient city immediately after the Ife-Modakeke crisis.

The paper further observes that if the custodians of these heritage sites and the general populace are well sensitized and educated, these heritage sites will maintain and sustain the tradition of keeping this heritage alive. There is a serious need for more research and intensified efforts to preserve these heritage sites and their proper management.

**B03.07: Exploring the evidence for a 'Transmutation of Meaning' in the redevelopment of Maze Long Kesh**

by **Richard McClenaghan** (*University of York, UK*)

Maze Long Kesh, a former prison in Northern Ireland strongly associated with the period of socio-political conflict known as "The Troubles," is going through a major redevelopment which will result in this site becoming a centre for the dissemination of peace building and conflict resolution techniques. To achieve this, the Maze Long Kesh redevelopment authority is actively manufacturing a new narrative based on conflict resolution—essentially ignoring the prison's historical links to controversial events and societal discord. The motives behind these actions appear to lie in potential political and economic gains, while those who hold associations with the site are being excluded and their concerns ignored.

What is more worrying is the clandestine method being used by the redevelopment agencies, which has resulted in the details of the on-going development being concealed from the wider community.

Researching this redevelopment has uncovered questionable actions by the agencies in charge, including the enforcement of a narrative by an exterior force onto the site which is diametrically opposed to the narrative historically linked to that place—a process which I have named a transmutation of meaning.

## Round Table B04

### Archaeology and heritage management in Europe after two decades of the Valletta convention

**Saturday, 7 September 2013, 14:00–18:30**

**Room:** EU 108 (Building 1, ground floor)

**Organisers:** **Sergiu Musteata** (Romanian Academy, Iasi branch, Romania) and **Penny English** (Anglia Ruskin University, UK)

The Valletta Convention (The revised European Convention on the Protection of the Archaeological Heritage, 1992), the ICOMOS Charter for the Protection and Management of the Archaeological Heritage (1990) and other important European and International Conventions are playing an important role in the process of archaeological heritage research and preservation.

After two decades of Valletta Convention (Malta, 1992) is the time to do a large evaluation of its implementation. This Round Table offers a great opportunity to discuss from comparative perspectives archaeological heritage preservation has developed in the countries which have signed, ratified and brought into force the Valletta Convention during two decades of its existence.

#### **B04.01: Summary on EAC symposium**

by **Katalin Wollák** (*Gyula Forster National Centre for Cultural Heritage Management, Hungary*), **Adrian Olivier** (*previous institution: English Heritage, UK*)

In March 2013 the EAC Heritage Management Symposium was devoted to the subject of 'The Valletta Convention: Twenty Years After – Challenges for the future.' The Symposium focussed on the benefits, problems, and challenges of the Valletta Convention in the light of the different experiences of its implementation across Europe over the past 20 years.

The symposium provided opportunity to discuss the successes, the unfinished business and the challenges presented by changing circumstances. The speakers presented examples how to improve professional performance and achieve greater acceptance of the values espoused by the Convention, they also looked at the future in terms of 1) identifying any priorities that it was felt should be addressed as a matter of urgency and 2) pointing the way forward in terms of understanding the key challenges that archaeologists and heritage managers are confronting as a result of the impact of changing economic, social, and political circumstances.

A rapid survey of the EAC members' perspectives about the Valletta Convention was undertaken in advance of the Symposium. This presentation will provide a summary of the main results of this survey together with an overview of the key conclusions of the Symposium.

#### **B04.02: Going against convention: challenging the dominance of international regulation**

by **John Carman** (*University of Birmingham, UK*)

It is a standard trope of Archaeological Heritage Management to use international conventions as models against which to evaluate practice. The assumption is that such documents always represent 'good' or 'best' practice and the categories of heritage they create are in some sense 'real'. This paper will seek to offer a challenge to this mode of discourse by re-emphasising the essentially local nature of heritage and its status as an invented category. The paper will refocus attention on the differences (rather than the assumed similarities) between those phenomena selected to represent heritage in different contexts. In doing so, it will propose that international conventions should cease to be seen as models to follow, and should be addressed as start-points for wider debate.

#### **B04.03: The "integrated management" as a perspective on Valletta Convention**

by **Evangelos Papoulias** (*National and Kapodistrian University of Athens, Greece*)

In Greece, the ratification process of the Convention for the Protection of Archaeological Heritage was completed with Law no 3378/2005.

The Convention principles of "integrated conservation" and of "in situ" protection of monuments have been fully implemented in Greece in recent years, within the framework of an extended number of archaeological excavations

carried out in the country with the financial support of European programs (CSF). Protecting and highlighting archaeological sites and monuments in accordance with the standards set by the Convention of Valletta (archive monuments, archaeological zones, public information, etc.) are key policies in dealing and handling the enormous archaeological wealth of the country. An attempt at re-evaluating the Valetta Convention could involve supplementing the concept of "integrated conservation" with that of "integrated management." Such a perspective would set the framework for intervening from the initial stage of protection until the final point of highlighting the monument by adding to monuments and their surrounding areas the asset of sustainable development. The example of the integrated conservation of Athens around the Acropolis, with the New Acropolis Museum and the pedestrian street (St. Paul's) can be seen as a model for other regions in Greece, such as Rhodes, Crete, Thessaloniki, Mystras, etc.

#### **B04.04: Archaeological Archives and the Valletta Convention**

by *Cynthia Dunning* (*ArchaeoConcept, Switzerland*), *Martin Kuna* (*Institute of Archaeology, Czech Republic*)

Article 4 of the Valetta Convention mentions the implementation of "appropriate storage places for archaeological remains". But there is no mention of the preservation of documentation archives. Once an excavation completed, the only memory left are finds and documentation. Not only essential for the publication of reports and results of the research work, but a factor for understanding working processes, archives are important for developing new theories. Conditions for the preservation of these archives must guarantee their physical survival, easy access and full comprehensibility of data for the future. Archiving is an integral part of the archaeological process. At the EAC 2007 Symposium in Metz a working group agreed on a definition and the principles of the archaeological archive. The activities of this working party resulted in a EU co-funded ARCHES project, whose aims are to produce a 'standard', drawn from existing principles, guidelines and related documents that inform the archiving process and a 'best practice guidance' for the compilation, preparation and deposition of Archaeological Archives. These standards and comments from individual national partners involved in the project will be published in 2014. We hope that this project covers the omission concerning archive preservation in the Valetta convention.

#### **B04.05: Reflections on the effects of Malta in the Netherlands**

by *Monique van den Dries* (*Leiden University, The Netherlands*)

In the last two decades, things have changed quite drastically in the way the archaeological heritage management is organized and conducted in the Netherlands. In 1992 the Dutch government signed the Malta Convention and in 2007 it implemented its principles through a revision of our Monument Act of 1988. This revision in the law added five major new modes of operation to our heritage management system and changed the overall modus operandi of archaeology from rescue-led to development-led. In this paper I will reflect on the achievements through the new approach.

#### **B04.06: Archaeological heritage management in Romania and Republic of Moldova**

by *Serqiu Musteata* (*Romanian Academy, Iași branch, Romania*)

Romania and Republic of Moldova are among of 42 accessions countries of the Valletta Convention. Romania signed the this Convention in 1996, ratified in 1997 and since May 21, 1998 entry into force, but the first official document on archaeology according Valletta Convention was approved by Romanian authorities just in 2000 and then modified in 2001, 2003, 2006. The Republic of Moldova signed Valletta Convention in 1998, ratified in 2001 and just since November 2002 entry into force. The law on archaeological preservation was voted by Moldavian Parliament just in September 2010. So, we can see how different was the process of signing, ratification and entry into force of this European Convention. But, in both cases is important to see the impact of International and European Conventions on archaeological research and preservation practices and how these treaties influenced the legal and management changes in our countries.

In my presentation I will discuss the steps which have been done by both countries after signing Valletta Convention for building own legal and managment systems of archaeological heritage preservation. Firstly, I will present the legal frameworks characteristic for each country. Secondly, will be discussed the management issues and thirdly, the main actual problems.



#### **B04.07: Archaeology in Slovakia before and after the Malta Convention**

by **Tomáš Michalík** (*Cultural Heritage Consulting, Ltd., Slovak Republic*)

Although Slovakia signed the Malta Convention several months after it became independent in June 1993, ratified convention came into force only in May 2001. Convention influenced a Slovak legislation considerably. When Slovakia adopted Act on Protection of Monuments and Historic Sites in 2002, majority of provisions of the convention was incorporated into this act.

Incorporation of interests of archaeology and cultural heritage as a whole into the process of spatial planning is one of the essential results of the convention.

Some numbers should be mentioned: From total amount of more than 15.000 cultural monuments (top status in legal protection) more than 400 can be described exclusively as archaeological. System of licensing, both for individuals and of organisations was established and works well. There were 106 licensed archaeologists, employed in 36 archaeological organizations in March 2013 in Slovakia.

Especially during last years increase of the number of private archaeological companies is observable. For example, although they form only one quarter of all the archaeological organizations, their field activity is much more visible than activities of traditional organisations like museums or universities.

Cooperation of the state authorities with police is successful and together with the new penal regulation it promises interesting results.

## Session B05

### The Archaeology and Heritage of the Prisoner of War experience: researching and managing a fragile resource

Friday, 6 September 2013, 08:30–13:00

Room: EU 102 (Building 1, ground floor)

**Organisers:** **Harold Mytum** (University of Liverpool, UK) and **Marek Jasinski** (Norwegian University of Science and Technology, Norway)

There has been a recent rise in interest in the archaeology of recent military conflict. One aspect of increasing importance is that of prisoner of war camps, and also the many military and other infrastructural features of the landscape constructed by prisoners of war. Museums also house important collections of artefacts made and used by prisoners whilst imprisoned. This session builds on the success and interest of Prisoner of War Archaeology (19th and 20th centuries) at the 15th EAA 2009 at Riva del Garda. Now we consider the role of recent fieldwork locating and interpreting the physical evidence, memory work linked to sites or artefacts, public interpretation of prisoner of war sites and artefacts, and the management issues related to this important though often fragile resource. Papers cover archaeology of the period from the 18th century to recent times. This session is sponsored by the Society for Post-medieval Archaeology.

#### **B05.01: Archaeology of and by Prisoners of War: Gerhard and Maria Bersu on the Isle of Man during World War 2**

by *Harold Mytum* (*University of Liverpool, UK*)

German archaeologist Gerhard Bersu was interned by the British authorities and sent to the Isle of Man in 1940. There he carried out a campaign of archaeological excavations for the rest of the war, assisted by his wife Maria and with a labour force provided by other internees. Three of his sites – Ballanorris, Ballacagen A and Ballacagen B – have been re-examined since 2011, together with his site archives and wider correspondence. This research has revealed the physical, intellectual and emotional challenges of civilian internment on the Isle of Man, the nature of 1940s archaeology, and the ways in which lived experience including archaeological excavation is affected by context. Using a relational approach emphasising the connections between people and people, and people and things, the Bersu sites and archive can be placed in wider networks of Manx wartime life. Here the internees, authorities, and civilian population all coped with the physical environment, supply shortages and uncertain futures. The materiality of this experience was a central and ever-present element, one manipulated and transformed by people's agency in many situations, including on the excavations and in the pseudo-domestic life of the camp for married internees.

#### **B05.02: Mapping Adolf Island: Archaeological Approaches to the Occupation Landscape on Alderney**

by *Caroline Sturdy Colls* (*Staffordshire University, UK*)

Alderney in the UK Channel Islands was occupied by the Nazis from 1941–1945. During this period thousands of workers were sent to the island from across Europe and housed in a network of labour camps and the only SS camp on British soil, Lager Sylt. Having been tasked with the construction of heavy coastal and anti-aircraft batteries, tunnels, bunkers and earthworks, these workers were subject to often fatal living conditions, whilst incidents of shooting, hanging and torture have been reported. Despite the significance of these sites in the history of World War II, the construction of the Atlantic Wall and the Nazi slave labour programme, the majority of the camps and fortifications remain dilapidated and unrecorded. This paper will outline a programme of non-invasive archaeological research which has sought to rectify this situation. It will outline how, instead of just viewing the fortifications constructed by the labourers as part of the Atlantik Wall construction programme, the installations should be considered as the products of slave labour. In particular, the scale and diversity of sites located will be highlighted, whilst the various social and political issues that have impacted upon fieldwork will be discussed.

#### **B05.03: By George, it's Harry! Excavating Escape Tunnels at Stalag Luft III, Zagan, Poland**

by *Iain Banks* (*University of Glasgow, UK*), *Tony Pollard* (*University of Glasgow, UK*)

In 2011, the Centre for Battlefield Archaeology at the University of Glasgow undertook excavations at the site of Stalag Luft III as part of an investigation into the archaeology of the Great Escape. Excavation revealed the entrance to Harry, the tunnel through which 76 men escaped on the night of 24/25 March 1944, along with traces of the materials used in constructing the tunnel. In addition, a second tunnel was investigated, a tunnel that had previously been largely

ignored or discounted. George was begun late in 1944, after the Great Escape and the news that the Nazis had murdered 50 of the escapers, and had a very different purpose than the better-known escape tunnels Tom, Dick and Harry. Excavation allowed archaeologists to get inside the tunnel for the first time since it was abandoned as the prisoners were taken out of Stalag Luft III on the Long March on 27 January 1945.

**B05.04: 'War junk' as cultural heritage: perceptions of WWII materiel at German PoW camps and military sites in northern Finland**

by Vesa-Pekka Herva (University of Helsinki, Finland), Oula Seitsonen (University of Helsinki, Finland)

This paper maps diverse attitudes to the material heritage of the German military presence in northern Finland during the Second World War. Finland cooperated with Germany on the attack on the Soviet Union in 1941 and there were over 200,000 German soldiers in the country during the war. In 1944, the Finns turned against the Germans, which resulted in the so-called Lapland War between the former brothers-in-arms. The German troops constructed all kinds of military sites in northern Finland, including over a hundred poorly known PoW camps. While little survives of those camps above the ground today, their archaeology appears to be rich and considerable quantities of materiel are still laying around at the former German military sites in the northern wilderness of Finland. The value of this 'war junk' has recently become a matter of controversy and debate among heritage professionals and the general public. This paper will discuss the archaeological potential and heritage value of German PoW camps and other military sites, focusing particularly on the perceptions and significance of the decaying German materiel found at those sites.

**B05.05: Making the Unfamiliar Familiar: The Archaeology of Japanese Internees at Idaho, USA's WWII Kooskia Internment Camp**

by Stacey Camp (University of Idaho, USA)

From May 1943 to May 1945, the United States government embarked on an experiment to use male Japanese internees as a labor force to build a highway in rural Idaho. Already imprisoned in remote internment camps, many of Kooskia's Japanese male internees voluntarily chose to leave their families and work for a small amount of pay at Idaho's Kooskia Internment Camp. This paper examines how these men coped with unjust imprisonment and isolation from their families using material culture. Scholar Jane Dusselier argues that internees used material culture to "re-territorialize" the landscape and reclaim aspects of their identity and former lives that the United States government sought to erase through internment. This talk will look at some of the unique archaeological finds discovered at Kooskia that speak to this re-territorialization process; these artifacts include artwork made from soil and rocks, a Japanese medicinal bottle that pre-dates WWII, a ceramic vase featuring a dragon relief, and both mass manufactured and handmade gaming pieces.

**B05.06: Altered Lives, Altered Environments: Creating Home at Manzanar War Relocation Center, 1942–1945**

by Laura Ng (University of Massachusetts Boston, USA)

The United States entered World War II after the American naval base Pearl Harbor was attacked by the Japanese Navy on December 7, 1941. Under the guise of national security and without due process, the U.S. government ordered the mass incarceration of all Japanese Americans living in the Western part of the United States. Two-thirds of those confined were American citizens. Manzanar War Relocation Center in eastern California was one of ten central sites of Japanese American incarceration. This paper will utilize multiple lines of evidence (oral history interviews, photographs, government records, and archaeologically recovered material) to examine how Japanese Americans at Manzanar transformed their austere living quarters and the prison/military landscape into a place they could consider "home." Demographic differences in Manzanar's population will be considered in examining the ways in which those incarcerated altered their environment under institutional confinement.

**B05.07: 'America's Concentration Camps' and the Japanese American Memorial to Patriotism**

by Emma Login (University of Birmingham, UK)

Following the Japanese attack on Pearl Harbour in 1941, approximately 120,000 Japanese Americans were forcibly removed from their homes and interned in what have been described by some as 'America's concentration camps' (Daniels, 1981); two-thirds of those interned were full American citizens. The Japanese American Memorial to Patriotism in World War II (Washington DC), unveiled in 2000, commemorates not just these events but also the 800 Japa-

nese Americans killed whilst serving in the United States military. It demonstrates not only tensions between former victims and perpetrators, but also those within the Japanese American community itself; reopening old wounds between individuals who believed internment to be an injustice and those who saw an opportunity to prove loyalty to a new nation. Building on current themes relating to continuing generational trauma (Nagata, 1990) this paper examines the Japanese American community's use of the war memorial process to facilitate self-definition and come to terms with its own history. It seeks to understand internment memorial processes within wider discourses of changing relationships with the past; in particular the growing demands for collective apologies (Trouillot, 2000) and for signs of a past that has been confiscated or suppressed (Nora, 2002).

#### **B05.08: Revenge of memories – Nazi construction plants and POW camps in Norway**

by Marek E. Jasinski (Norwegian University of Science and Technology, Norway)

Construction of *Festung Norwegen* with the Atlantic Wall and other giant Nazi investments in Norway 1940-1945 demanded a massive and constant supply of manpower. During WWII, Norway housed the largest number of German troops and foreign prisoners when seen in relation to the native population of any other occupied country in Europe. More than 150,000 Prisoners of War and slave labourers from at least 15 European nations were transported to Norway. The largest groups by nationality came from the Soviet Union, Poland, Yugoslavia, and Germany. As the result, a network of approximately 500 Nazi camps for prisoners of war, slave labourers, political and criminal prisoners and Norwegian Jews was established in Norway during the period 1940-1945.

Today, few physical traces of Nazi camps are still visible within the present Norwegian cultural landscape and both knowledge and awareness of these relics are scarce among the general public in Norway. This paper presents archaeological results of the interdisciplinary project *Painful Heritage. Cultural Landscapes of the Second World War in Norway. Phenomenology, Lessons and Management Systems*, financed by the Research Council of Norway.

#### **B05.09: Contemporary totalitarian systems victims identification possibilities.**

by Andrzej Ossowski (Pomeranian Medical University in Szczecin, Poland), Krzysztof Szwarzzyk (Institute of National Remembrance – Commission for the Prosecution of Crimes Against the Polish Nation, Poland), Piotr Brzeziński (Association Memoria Victis, Poland)

In the following publication we would like to present exemplary research results of the teams dealing with search and identification of the victims of totalitarian systems in Poland. In our work we will follow on some examples the procedures used by research teams depending on the kind of the gravesite. We will describe the case of the gravesite located in Linowo in north-western Poland. We present the mode of identification of the Red Army soldiers taken prisoner by the Germans during World War II and deceased in captivity. In the course of our search the unmarked burial of 10 Soviet prisoners of war was found. The next example are preliminary identification results of the victims of Stalinism crimes buried in unmarked locations on the Military Cemetery Powazki in Warsaw. During those works the special stress is put on the identification of the victims and this is why on 28th September 2012, the Pomeranian Medical University in Szczecin and the Institute of National Remembrance – Commission for the Prosecution of Crimes Against the Polish Nation signed an agreement on the Polish Genetic Base of Totalitarianism Victims ([www.pbgot.pl](http://www.pbgot.pl)). The project utilizes the most up-to-date achievements of forensic genetics to identify the victims.

#### **B05.10: (Un)representable War Crime. The presence and the roles of material relics of Katyń mass murder in public space**

by Anna Zalewska (Maria Skłodowska – Curie University, Poland)

Katyń – one of the first coordinated transnational mass murders of foreign prisoners by a totalitarian state is seen by Poles as pivotal object of public memory. 21,857 unarmed Polish prisoners in the spring of 1940 were killed by officers of the Soviet secret police (NKVD) and buried in a number of clandestine sites in the Soviet Republics of Belarus, Russia, and Ukraine. Since the 90s twentieth century archaeology and forensic sciences can be seen as fully engaged in restoring the dignity and identity of the victims and inner peace of *Katyń Families*. (In)directly they support the process of remembering Katyń and undermine the *Katyń Lie* – the centerpiece of a relentless Soviet campaign of falsification and disinformation that gained the opinion of *the longest and most extensive cover-ups of a mass murder in history*. In my presentation I will try to face three questions: 1) How Katyń atrocity was/is (re)presented and if material relics related to it were/are engaged in that process? 2) Can inhumanity and complexity of that murder be treated as representable? 3) Whether it is acceptable within archaeological discourse to confront Katyń remains with the hypothesis that *thing is what we make of the world rather than simply what we find in the world?*

## POSTER

### **B05.01-P-3: World War I Prisoner of War Camp at Holmbury St Mary, near Dorking, Surrey, UK**

by **Jenny Newell** (*Surrey Archaeological Society, UK*), **Keith Winser** (*Surrey Archaeological Society, UK*)

In February 1918, 44,755 German soldiers were held in Britain; 23,749 in work camps and 6,168 awaiting work-place accommodation. Most were paid to work on farms and in forestry. At Holmbury a camp, opened in August 1917, was established in a plantation which the prisoners felled. An inspection undertaken in October 1917 by the Swiss Legation in London with reports sent to the Red Cross in Geneva and to Berlin, noted that 'The camp is healthily situated on high ground. The prisoners have ...been under canvas, but they have now built huts ..... each .... capable of holding 30 men. Stoves for heating are now being put in. Each man has the usual bed board and trestle bed and four blankets. Two dining huts are in course of construction. In the meantime the prisoners take their meals in a marquee tent'.

The camp was closed by September 1919 and largely faded from local memory. Recent survey of the remains revealed bases of buildings tentatively identified from a sketch by a local resident, Beattie Ede. The route of a Decauville-type railway has also been located.

Many camps existed in Britain but few have structural remains; Holmbury Camp is unusual, possibly unique.

## Session B06

### Creating Landscape Visions: managing the past while imagining the future

Friday, 6 September 2013, 08:30–13:00

Room: EP 206 (Building 1, 1st floor)

**Organisers:** **Gavin MacGregor** (Northlight Heritage, UK), **Kenneth Bropy** (University of Glasgow, UK), **Chris Dalglish** (University of Glasgow, UK), **Benjamin Grahn-Danielson** (Rio Kulturkooperativ, Sweden), **Gerhard Ermischer** (Spessart-Projekt, Germany), **Alan Leslie** (Northlight Heritage, UK) and **Aphrodite Sorotou** (Mediterranean Institute for Nature and Anthropos, Greece)

Landscapes are living, actively created through current practices, in response to the conditions bequeathed by the past. Some practices manage and maintain the character and condition of landscapes, others gradually erode them, but in some cases practices can focus on delivering a positive, creative vision for the future.

We wish to explore ways in which landscapes can be actively and creatively re-imagined, managed and transformed. Are there examples of landscape visions where the landscape's 'pastness' is fundamental as a driver for a positive future beyond sterilisation through protection measures? What creative strategies might be deployed to realise these visions? Or are there particular visions for landscape that require 'pastness' to be swept away?

We welcome contributions which explore the creative practice components of past and current landscape visions. These could comprise:

1. Archaeological examples of landscape visions which were actively and creatively delivered in the past (e.g. Roman / Greek Emporia; Medieval 'deer parks'; 18th / 19th century designed gardens; 20th century allotments).
2. Examples of contemporary visions for landscapes which address the past component of the landscape within the framework of creative landscape development (e.g. rewilding, reforestation, post-industrial regeneration).
3. Reflections on the role of the past in the creative process of imagining future landscapes and formulating landscape visions.
4. Insights and reflections on artistic practices which engage with past components of landscapes and on how they may or may not contribute to future visions. How do artistic engagements with landscape (e.g. through land art, environmental art and art in the public realm) connect with the past and help define, support or challenge visions for the future of particular landscapes?

#### **B06.01: Archaeologies of the Future: the role of creativity and imagination in formulating landscape visions**

by **Gavin MacGregor** (York Archaeological Trust, UK)

This paper will provide a general introduction to the Creating Landscape Visions session through considering the broader context to the other papers. It will consider the concept of landscape vision(s) and reflect on some examples of the different ways in which landscapes have been actively and creatively re-imagined, managed and transformed in the past. It will consider whether the discipline of archaeology, which can readily be caricatured as backward looking and conservative, has the potential to contribute more actively to creative processes of imagining future landscapes and formulating landscape visions.

#### **B06.02: Preserving the future, projecting the past: the entanglements between agricultural archaeology and planning policies in Asturias (Spain)**

by **Pablo Alonso González** (University of Cambridge, UK), **Margarita Fernández Mier** (University of León, Spain)

The recent history of spatial management in the North of the Iberian Peninsula in peripheral and depopulated mountain areas has been marked by the mystification of the natural over the cultural values. Public policies aim to trigger a socioeconomic transition towards tertiary economies based on tourism in these areas, traditionally dedicated to agriculture and farming. This economic shift has relied on the exploitation of natural resources for tourism consumption. The keyword for this change in policies has been "natural landscape" instead of "cultural landscape", thus ignoring the complex evolution of these areas, where the human action has been present since the prehistoric times.

Only recently research has started to study the history of these landscapes, underscoring their temporal depth and complexity, the human role in their shaping, and the role archaeology can play in planning policies. Research carried out in two villages (Vigaña and Santo Adriano) enables us to understand the history of landscape formation in the area. The knowledge acquired should constitute the basis to underpin heritage management strategies and for the critique

of the currently existing ones. Finally, we will present some initiatives recently emerged that incorporate local people in the understanding and management of the territory.

#### **B06.03: Biocultural Heritage as a tool for envisioning future landscapes**

by Leif Gren (Swedish National Heritage Board, Sweden), Thomas Risan (Swedish National Heritage Board, Sweden)

The concept Biocultural Heritage has been used in Sweden in the last decades as a tool to understand/manage past traces of "Man-made Nature". The concept has been used to bridge the span between heritage protection and nature conservation. The purpose has been to ensure that future management visions contains past components of landscape, such as biotopes and species that cannot survive without human interaction, often rooted in traditional subsistence and social practises (CBD, article 8j). This paper will discuss how some past visions for future landscapes have been implemented, like Linnaeus' efforts to refine and cultivate Swedish agricultural land, the emergence of national parks aiming to create future "wilderness", and the "time-freeze" in certain landscapes evident in the concept of culture reserves. Presently efforts are made to restore Linnean 18th-century cultural landscapes; landscapes Linnaeus himself envisioned as "improved" future landscapes. To better understand/manage present landscapes it is important to understand Man's historic interaction with nature through the concept biocultural heritage. The biocultural heritage can accentuate and highlight other historic elements, like monuments and sites, and deepen and improve our understanding of a landscape. Thus, the concept of biocultural heritage may facilitate work with visions for our future landscapes.

#### **B06.04: Energyscapes – The Story of Energy Production in the Landscape**

by Gerhard Ermischer (Archaeological Spessart-Project – Institute at the University Würzburg, Germany)

The recent changes in energy policies create an enormous pressure on our landscapes. The development away from fossil energy to renewable energy causes a great debate on the changing landscape: wind turbines, wind farms, solar panels on houses and in fields, energy crops for bio-gas and bio-fuel production, new power lines for the intelligent super-grid – all these make a great imprint on the landscape and tank and are highly emotional. But most of these developments are not new. Renewable energy was the only source of energy for millennia of human evolution. And the production of energy crops, windmills and watermills have changed the landscape dramatically again and again in the past. Most people are not aware of this historic fact. Nor do they reflect on the past reactions on change, expressed in literature or painting for example, which have created a romantic picture of the landscape which today is seen as the norm landscape defined as beautiful, socially positive and good to keep. This paper shall explore the impact of energy production on the landscape in the past, the reaction of the people to those changes and the lessons we could learn from them on managing the actual change.

#### **B06.05: Policies and compensation measures: Development impact on heritage and cultural values in a democratic landscape**

by Benjamin Grahn-Danielson (Rio Kulturkooperativ, Sweden), Magnus Rönn (KTH Royal Institute of Technology, Sweden), Stig Swedberg (Rio Kulturkooperativ, Sweden)

During 2013-2014 Rio Kulturkooperativ are working with a research project about compensation measures for heritage and cultural environment values in the landscape. We have seen problems with how authorities and real estate managers deal with the impact on landscape values. In several projects we have tried to propose measures for compensating impact on the landscape and cultural heritage values.

The U.S and several European countries use compensation measures to compensate damage on natural environment. We want to find out if it also is possible to work with compensation measures for impact on the landscape, the heritage and cultural values. This issue has become even more relevant after the European Landscape Convention was ratified. The convention puts the democratic landscape high, and compensation measures can be a part of building a democratic landscape.

The paper will present the background for the research project about compensation measures for cultural environments, the legal background (from a Swedish perspective), but we also want to discuss future ways and means. For this reason, four different principals for dealing with compensation as a key concept in planning processes, will be presented along with criteria's for judging cultural environment values.

#### **B06.06: Making urban megaliths work: urban prehistory**

by **Kenneth Brophy** (*University of Glasgow, UK*)

Chris Tilley once suggested that megaliths in an urban environment don't work. Yet, where such juxtapositions do occur, rather than dwell on a sense of loss, we should see these as opportunities. Urban prehistory forces us to acknowledge the reality that engagements with the archaeological record occur in the present, mediated to us via the modern landscape and context. Yet archaeologists spend a lot of time trying to look beyond or through the present, back to the past, almost as if the present doesn't matter and can be wished away. I will also argue that we can engage with urban prehistory positively for the common good. Urban prehistory affords a wonderful opportunity for us to engage with lots of people. So my paper will explore the potential for utilising traces of prehistory that just happen to be situated, perhaps even still extant, in places that are now urbanised or industrialised. As well as reflecting on examples of past and current practice in relation to how urban prehistory has been dealt with in Scotland, I will also outline creative and innovative ideas and projects which I am involved in and developing that should demonstrate that megaliths in urban environments can work.

#### **B06.07: The past as a catalyst for future benefit: an emerging model from inner city Glasgow**

by **Alan Leslie** (*Northlight Heritage, UK*), **Ingrid Shearer** (*Northlight Heritage, UK*)

Govan in Glasgow is known for both its early medieval significance and as an early modern shipbuilding hub. The people of Govan have a strong sense of their independent identity, including a strong attachment to the physical place, though in common with many inner-city areas, Govan has become synonymous with long-term social problems and neglect of the physical fabric of its built environment.

Recently, the actions of a disparate group of people has begun to effect an autochthonous revisioning of Govan's genius loci, with the remanence of its historic dimension serving as a catalyst for developing physical, spiritual, emotional, social and economic proposals for a better future. The approach emerged piecemeal from the people of Govan and from various collaborations with professional experts and has only gradually become more concerted. As well as proving effective, this approach actively encourages and supports multi-vocality and an action-oriented approach to problem solving, linked by a common goal. This paper examines how the Govan experience of the use of the past as a catalyst may provide a model for creating better landscape visions in other contexts.

#### **B06.08: Quarries of Roman Philippopolis**

by **Zdravko Dimitrov** (*National Archaeological Institute with Museum – Sofia, Bulgarian Academy of Sciences, Bulgaria*), **Kamen Stanev** (*Ministry of Culture, Bulgaria*)

The project "Quarries of Roman Philippopolis" (Plovdiv, Bulgaria) is to investigate the stone hills from which the city was built during the Roman era. The main focuses are: topographic location; different ways of stone production; variety of workshops and ateliers; intensity of use through the centuries; including of the quarries in urban environment in antiquity; their destiny over the centuries and especially the current status of the quarries in very fast changing modern urban environment of Plovdiv. Roman Philippopolis quarries today are very seriously threatened by new construction. Many of them have already been destroyed in XIX-th / XX-th century. On the other hand, they could socialize very well in the urban environment of modern Plovdiv. They are located on the six major hills that stand out above the surrounding terrain of the city. Some of the hills are fully planted, but just partly turned into parks years ago. The inclusion of Roman quarries in the park system of Plovdiv is very appropriate and could be executed. It could be made after finishing of this project for the total research of their nowadays preserved parts. They need to be determined with the status of archaeological monument, with clear and sure boundaries and full system of protection and managing.

#### **B06.09: Ecomuseums as tools for landscape protection and management: engaging the local communities in the development of the Vjosa/Aoos ecomuseum**

by **Aphrodite Sorotou** (*Mediterranean Institute for Nature and Anthropos, Greece*), **Alexios Katsaros** (*Mediterranean Institute for Nature and Anthropos, Greece*), **George Dimitropoulos** (*Mediterranean Institute for Nature and Anthropos, Greece*)

An ecomuseum is founded with the aim of studying, displaying and protecting the relationship of a given population and its surrounding environment, as moulded in the course of time, interpreted in the contemporary situation and with a conjecture of its future development. In this sense, an ecomuseum can display, in a comprehensive fashion, the



diachronic formation of an area's landscapes and contribute to their sustainable development through creative and forward-looking actions generated by local communities.

Since the establishment of the first ecomuseums, the idea has undergone several changes, but still retains the basic principles of *in situ* conservation and encouragement of local traditional practices, customs and arts. Its most distinctive characteristic is that is based on a voluntary agreement between the local communities for promoting their identity and sense of place while contributing to the protection of their heritage, local resources and landscapes.

In seeking to examine how these principles coincide with the idea of the landscape as a living heritage and how an ecomuseum can become an innovative tool for landscape protection and management, this paper will provide examples drawn from several ecomuseums, particularly focusing on the development of the Vjosa/Aoos ecomuseum in the borders of Greece and Albania.

#### **B06.10: What exactly is in this field? I can't see anything...**

by [Heather Sebire](#) (*English Heritage, UK*)

Many archaeological and historic sites, which survive as part of our modern landscape are still only interpretable to specialists rather than the general public.

Through legal protection many archaeological and historical landscapes might be described as fossilised so in an attempt to secure the protection of monuments in their landscape for the future do we miss the opportunity to have alternative visions for these historic landscapes, which might ultimately ensure their protection? Engaging the media-conscious 21<sup>st</sup> century public in future-proofing historic landscapes may be one way to provide a vision for the future, making them accessible to all. This paper will consider how archaeological landscapes were constructed, identified, and protected and might be protected for the future drawing on case studies from Uley Long Barrow in Gloucestershire, Wroxeter Roman city in Shropshire and the unique landscape of the Stonehenge World Heritage Site. Does our vision last only for our generation or are we planning visions of landscape which will project into the future?

#### **B06.11: The Parallax View: Artistic interpretation of the archaeological excavation 2012/13, Nedre Ramme, Norway, owned by Edvard Munch 1910–44**

by [Vilde Vegem](#) (*Akershus County Council, Norway*), [B. Kjartan Fønsteli](#) (*Akershus County Council, Norway*)

One of the intentions of the archaeological investigation of the property was to find the sites from which Munch chose his painted views. The spots were mapped out through the findings of artefacts (as paint tubes), landscaping, age determination of trees, reconstruction of the forest and visual analysis.

The excavation, the surrounding landscape and the artefacts was documented, interpreted and analysed with the approach of the artist in residence. By connecting 3D photography with the Munch paintings, the intent of the present artist is to erase the gap of time separating the past Munch landscape and her own artistic contemporary relation with the landscape. The artistic work pursues to be a tool constructing a parallax view and thus metaphorically erase the time. This timelessness in the work inherits the possibilities for visions and imagining of the future.

These works consisting of paintings made by Edvard Munch and contemporary photographs put together to 3D images will be the basis for the dissemination of the landscape, Munch and contemporary photography. The locations will be cleverly found in the landscape by the audience led there with the help of hidden sound.

#### **B06.12: Imagining Reality: the appropriation and transformation of archaeological sites and landscapes**

by [David McOmish](#) (*English Heritage, UK*)

The processes of destruction and abandonment, of interpretation and re-interpretation, are common and continuing threads in all archaeological sites and landscapes, and of all periods too, i.e. these things happen in the present (and will in the future) as much as the past. The reasons for this are, self-evidently, complex but at the heart of it lies what John Barrett has referred to as 'a grounding of ideological truths' – ultimately, it is about giving meaning to the historic fabric embedded in the world around us and thereby ensuring that it has a relevance to our everyday lives. I would argue that, as a principle, this view shapes much heritage protection legislation across Europe and is a key component in the European Landscape Convention: it certainly lies at the heart of our national story in England and is articulated at internationally famous sites such as Stonehenge or Maiden Castle. Our work, then, becomes a vehicle for local engagement and democratic action, with the clear potential to invigorate local communities, and I'll explore this through a small number of case studies undertaken by English Heritage.

### **B06.13: The Landscape Community and the Participation Deficit**

by *Chris Dalglish* (University of Glasgow, UK)

Landscapes do not stand still. They are continually created and re-created. The ongoing creation of the landscape is not a simple, straight-forward matter. Landscapes *emerge* from complex interactions between human and non-human actors. This process of emergence happens in the present, under conditions bequeathed by the past.

Understanding this, in considering positive and creative approaches to landscape conservation, management and development we should ask not ‘what kinds of landscapes should we imagine and create?’ but ‘what conditions ought to be set for landscape emergence?’ As archaeologists, we should ask: what is the role of the past in fostering generative landscape processes?

In addressing these questions, this paper will discuss the ‘participation deficit’ in current practice. Public participation has become widely established as a principle for good landscape governance, but the implementation of this principle is limited in practice. The paper will discuss the idea of the ‘landscape community’ as a means of identifying the kinds of conditions which are necessary for just landscape processes and of defining the role of the past in such processes.

The paper arises from an ongoing collaboration with Kenny Brophy (University of Glasgow), Gavin MacGregor and Alan Leslie (Northlight Heritage) and Aphrodite Sorotou (Med-INA).

### **POSTERS**

#### **B06.01-P-2: “Whoever takes, shall give back” – A workshop about compensation measures for cultural environment**

by *Benjamin Grahn-Danielson* (Rio Kulturkooperativ, Sweden), *Stig Swedberg* (Rio Kulturkooperativ, Sweden), *Magnus Rönn* (KTH Royal Institute of Technology, Sweden)

The landscape is a living, changing resource for us people. All physical values are situated in the landscape. The European Landscape Convention are talking about a democratic landscape, where the users should be involved in the shaping of the landscape. But what should we do when the society’s development damage values in the landscape?

When it comes to heritage, architecture and historical buildings the problems pile up. In the heritage sector, every ancient remain or site are unique. We cannot build up a settlement as a compensation for a destroyed one, as we can recreate a swamp or wetland for impacts on wetlands downstream. An old house is not the same as a new one with the same exterior. There, the values are connected with the historical dimension. And how is it possible to handle impact upon this?

During this short workshop we will in small groups, try to look at different cases and discuss possible compensation measures and methods for compensating cultural values. The cases are taken from Road-, wind power- and planning projects in Sweden.

#### **B06.02-P-2: Visualizing the invisible: Communicating erased Iron age Burial Mounds at Tonsaaker Norway**

by *Hanne Huseby* (Akershus County Council, Norway), *Pia Skipper Loken* (Akershus County Council, Norway)

Communication of intangible cultural heritage faces interesting challenges. Facing such challenges, Akershus County and Oslo University College wished to facilitate and communicate the erased burial mounds at Tonsaaker in Norway. Our goal was to create a new meeting place, based on communications of history from the Iron Age to the present. A goal was to develop an inclusive dissemination project. **How can we recreate a prehistoric cultural landscape based on intangible cultural heritage? Is it possible to visualize erased burial mounds and make them available for everybody?** The proposed lecture discusses the relevance of interdisciplinary methodologies between archaeology and design, an approach intersection between object and materiality. To visualize the religious landscape of Tonsaaker the erased burial mounds were used as a foundation. Now being a field, the sign was built up of local stone, as a reminder of stones from the cleared field. The presented project’s design is inspired by tactile communication based on prehistoric materiality. The processes materializing communication from idea to a visualization of the invisible is stressed. By focusing on the interactions of past and present and cultural heritage a stronger identity of place is created.

**B06.03-P-2: The projects of Rosenbergs regent Jakub Krčín of Jelčany and Sedlčany. The most famous Czech builder of ponds in the mirror of archeology of early modern period in South Bohemia (Czech Republic)**

by **Michal Preusz** (University of South Bohemia, Czech Republic), **Vladislav Burian** (Museum of Jindřichohradecko, Czech Republic), **Klára Paclíková** (University of South Bohemia, Czech Republic), **Martin Pták** (University of South Bohemia, Czech Republic)

The blue areas of ponds are still unmistakable part of South Bohemian country. The beginnings of the Renaissance extensive pond systems are dated to the latter half of the 16th century. This system transformed the original historical landscape. At that time famous builder Jakub Krčín of Jelčany and Sedlčany worked in the service of noble family Rosenberg as a regent of dominion. Rosenberg regent didn't have hesitated to heap pond dams and make artificial water sewer over selected human settlements and agricultural areas by flood water, in the sake of extending the most profitable economy – fish breeding. New mirror to works pieces of Jakub Krčín, which transformed globally landscape of Southern Bohemia, sets rapidly emerging archeology of the early modern period. In terms of South Bohemia, it's currently focused on the study of the flooded suburbs Svinenské of Trebon and reconstruction of extinct pond system in the Rosenbergs deer-park of Netolice.

## Round Table B07

### Discovering the Archaeologists of Europe ... and of the World

Saturday, 7 September 2013, 08:30–13:00

Room: UP 115 (Building 2, ground floor)

**Organisers:** **Gavin MacGregor** (Northlight Heritage, UK), **Kenneth Aitchison** (York Archaeological Trust, UK) and **Heleen van Londen** (University of Amsterdam, The Netherlands)

Discovering the Archaeologists of Europe is a project supported by the Lifelong Learning Programme of the European Union that is bringing together participants from nineteen European states to identify how archaeology is defined as a profession in those countries. It is seeking to find out what they do, how they are qualified and rewarded, and most importantly, how to maintain the skills of professional archaeology in the post-2008 economic situation we all find ourselves in.

This session seeks to expand discussion beyond the project participants, to bring together anyone who has anything to say about employment and training in professional archaeology. Contributions are sought from all countries in Europe – and beyond – and from all sectors of archaeology, whether applied, academic, fieldwork focussed or administrative, looking to stimulate discussion on how archaeology can be delivered and sustained.

#### **B07.01: The Archaeological Labour Market in the United Kingdom, Germany and Austria 2008–2012: a comparison of the supply side**

by **Katharina Maeller** (*Internationales Österreichisches Archäologie Forum (IÖAF), Austria*)

Contemporaneous with the start of the second *Discovering the Archaeologists of Europe* project on 1 November 2012 we looked at the supply of 'open positions' advertised in Austria, Germany, and the United Kingdom in the period roughly between the start of the first *Discovering the Archaeologists of Europe* project in 2007 and the middle of September 2012.

This analysis is based on the archaeology job adverts collected through the International Austrian Archaeology Forum's (IÖAF) online archaeology jobs resource. Operational since November 2003, we have since put online 9,381 archaeology job adverts. Most of these adverts – 8,491 – were for posts in Austria, Germany, or the United Kingdom, with the vast majority of adverts relating to posts in the latter

Our data shows that the current recession affected all of the European archaeology labour market badly where (previously) existing jobs are concerned. The number of jobs advertised during this period of time decrease dramatically up to 80%.

#### **B07.02: Determinants of the Spanish archaeological activity: evolution and effects of economic slowdown**

by **Eva Parqa-Dans** (*Institute of Heritage Sciences (Incipit-CSIC), Spain*)

Spanish archaeology as a commercial activity is something relatively new, which has only existed for some twenty years, and has been affected by different institutional and economic factors in a highly competitive and highly regulated market. Specifically, the publication of the Historical Heritage Law 1985 (and other laws relating to land use and the environment) establishes a set of requirements for the management of archaeological heritage. This process led to a management or preventive archeology to protect and spread the Spanish heritage. These requirements added to the growing demand for archaeological services due to the construction boom led to the creation of commercial archeology in this context. Favorable economic conditions for the activity translated into significant grow in the number of archaeological firms. However, the arrival of the economic crisis in 2007 had a negative impact on the activity, resulting in hazardous economic conditions and low rates of firm survival. Thus, with some time lag, the number of firms began to decline in 2009.

#### **B07.03: Discovering the Archaeologists of Czech Republic. Results and Changes in Archaeology between 2008 and 2013.**

by **Jan Frolík** (*Institute of Archaeology AS CR, Prague, v.v.i., Czech Republic*)

Short summary about results of the project *Discovering 2006-2008* and results of the project *Discovering 2014*. The changes in Czech archaeological community will be discussed and the impact of economical crisis will be discussed, too.

#### **B07.04: Professional archaeology in Switzerland – Pros and contras of a federal system**

by Cynthia Dunning (*ArcheoConcept, Switzerland*)

Switzerland is a federal country with 26 cantons and as many governmental archaeological management offices and corresponding legislation. There are great advantages in this system, amongst them the employment of an important number of professional archaeologists, an optimal covering of endangered sites through the numerous archaeological services and a great diversity of organisational processes adapted to the governmental variety of the country. Federalism also has disadvantages based on this great variety of organisation forms which give an image of so many small “archaeological kingdoms”. In this way we can observe different changes which occurred these last three years with the new financial equalisation of the Swiss Confederation. In this movement, the Federal Roads Authority has established its own archaeological office, opening the way for a “national archaeology” and the Federal Office of Culture has reorganised its subvention system for archaeological projects. Therefore the cantonal archaeological services have to adapt themselves to these new changes. Some of the questions which now arise are if the autonomy of the cantons is affected in a way or another or if there has been a greater collaboration between the cantons and the Federal offices. How does this influence the work professional archaeologists in Switzerland?

#### **B07.05: MAARK – Working against temporary contracts in Norwegian Archaeology**

by Tine Schenck (*MAARK, Norway*)

MAARK – Working against temporary contracts in Norwegian Archaeology

Tine Schenck, MAARK

Norwegian Archaeology saw an increase in budgeted activity of over 300% from 2005 to 2009. With this there has been a corresponding rise in the use of temporary labour, with the average temporary archaeologist having only 8-9 months of work each year. In this situation, MAARK (Association for Temporary Employed Archaeologists) was founded in 2007. MAARK has continued to grow and has now gained a firm foothold in the daily life of Norwegian Archaeology, with representation both at universities, county councils and musea. In 2010, MAARK formally became a part of the Norwegian Association for Researchers, and now has the backing of a large trade union to help its cause. The talk will focus on the history, structure and role of MAARK in professional Archaeology in Norway, and will present some results from the 6 years since it was founded. It will particularly highlight achievements within its core cause: The fight against the use of large-scale use of temporary labour in archaeological contracts.

#### **B07.06: Archaeology as a profession on the Island of Ireland: A roller coaster from the past into the future.**

by Kerri Cleary (*Institute of Archaeologists of Ireland, Ireland*)

Ireland's participation in ‘Discovering the Archaeologists of Europe 2006–08’ provided an invaluable opportunity to capture a snapshot of the profession at the height of economic prosperity and a related construction boom. The moment captured was, however, on the cusp of a descent as the economic downturn subsequently came sharply into view. As Ireland now participate in ‘DISCO 2012–14’ we examine what the intervening four years have brought to the profession and more importantly, what highs and lows are promised by the coming years. How have archaeologists adapted and up-skilled to continue to earn a living from their chosen career? What opportunities exist for newly qualified graduates? Will the roller coaster continue or can we, as a unified profession, both nationally and internationally, stimulate a programme for sustainability in these economically challenging times?

#### **B07.07: “Discovering the Archaeologists of Europe. Digging in the crisis”: valorising the archaeologists at work**

by Alessandro Pintucci (*Confederazione Archeologi Italiani, Italy*), Elisa Cella (*Confederazione Italiana Archeologi, Italy*)

The International conference “Discovering Archaeologists of Europe: Digging in the crisis” has been the first moment for the “valorization” of the DISCO 2014 project. Both speakers and guests participating to the Conference got into the Project dynamics, and have data about being an archaeologists in Europe. At the same time we wanted to “valorize” the Project without being limited by the physical barriers of a physical place.

We used social media to improve visibility of this Conference, and to reach wider amount of people: we used live streaming on InfoCIA Youtube channel, and to increase connections we used traditional and new media, by publishing articles on specialized magazines, news releases, newsletters, and threads on CIA Facebook pages, LinkedIn and Twitter accounts too. We twitted during the whole day, and the immediate proof of an interest can be considered the number of “retweet” we had, that created a spontaneous network of supporters that will be used during the next two

years, as the DISCO 2014 project proceeds. Main goal is to let people visit the DISCO official web site, inform the wider number of archaeologists of the existence of it, appreciate it, follow it, and become an active part of it.

**B07.08: Discovering the profession of archaeologist in Cyprus: First comparisons between the results of the two data collection periods.**

by *Elena Prokopiou* (*Department of Antiquities, Ministry of Communications and Works, Cyprus*)

Cyprus, as a partner of the project "Discovering the Archaeologists of Europe: 2006-2008", has gathered data from 15 organisations that employed archaeologists, and analysed the contemporary state of the archaeology sector in the country.

The paper will look at the data that will come out from the collection of the questionnaires of the 2012-2014 project cycle and examine the preliminary results. A brief analysis of the new data will be attempted, identifying the newly established organisations, focusing on the structure of organisations employing archaeologists as well as archaeologists' post profiles. Thus it is expected that we will be able to make our first comparisons of the results of the two data collection periods (2006-2008, 2012-2014) and try to identify trends over time.

**B07.09: From treasure hunters to scientific researchers: development of archaeology and archaeologist's profession in Latvia**

by *Andris Sne* (*Faculty of History and Philosophy of the University of Latvia, Latvia*)

Prehistoric studies, as well as archaeology in general, are among the key issues in Latvian historiography, and we may trace back this tradition since the formative period of the Latvian archaeology in the 19<sup>th</sup> century. Archaeologists as profession emerged much later, in the 1920s and 1930s with the establishment of independent Latvia state that led to the formation of university courses in archaeology, large field surveys and excavations, archaeological heritage protection etc. The interpretative approach in the archaeological studies belonged to the culture historical tradition with explicit emphasis on artefactual and ethnic research until mid-20<sup>th</sup> century. The Soviet occupation changed also research praxis and interpretative horizons of Latvian archaeologists who now had to work within centralised research infrastructure and dogmatic Marxist tradition. In the 1990s, archaeology in Latvia experienced both crisis and gradual restructuring towards the European praxis and meaning of archaeology. The possibility to join the European archaeological community after the fall of Soviet occupation gave new insights into the research approaches and allowed to establish contacts with colleagues in the West. These developments encounter now new challenges as well as new opportunities due to the financial crisis since 2008.

**B07.10: You talk the talk, how do you walk the walk? A personal and pragmatic take on the archaeological practice in Romania.**

by *George Bodi* (*Romanian Academy – Iași Branch, Romania*)

One of the hot topics of the public discourse in Romania is constituted by the ever-growing phenomenon of the „brain exodus“. Although, at declarative level, all efforts are made to support the development of all areas of scientific research, the actual situation is rather grim.

The subject of the paper is constituted by the presentation of a personal attempt to cope with an institutional dilemma: how does one attract finances in order to educate and integrate the young researchers in state funded institutions, in the conditions where the state forbids the employment of new personnel? Although the answer is obvious another question arises and needs to be solved: how does one attract extra-budgetary funding with a continuously diminishing, aging and morally exhausted community of formally competitive specialists? Starting from this reality, I wish to present the structure and philosophy of a freshly created para-institutional working-group aimed at solving, at least partly this impasse.

**B07.11: Characterizing the U.S. Cultural Heritage Management Industry with Independently Collected and Analyzed Data**

by **Donn Grenda** (*Statistical Research, Inc., USA*), **Michael Heilen** (*Statistical Research, Inc., USA*), **Teresita Majewski** (*Statistical Research, Inc., USA*)

Since 1995, the American Cultural Resources Association (ACRA) has been the national trade association for Cultural Heritage Management (CHM) firms in the United States, where projects are generally undertaken because of several pieces of federal legislation enacted decades ago. ACRA promotes the common interests of CHM firms, and since the recession began has prioritized political advocacy and education regarding best practices as its primary activities. In 2013, ACRA carried out two surveys. One was designed to collect recent data rapidly on industry metrics, including firm size, employee educational levels, and firm revenues. These data made it possible for the first time to quantify the American CHM industry in terms that politicians, making hard decisions on the basis of often limited information, can use effectively. The other survey, conducted previously in 2005, 2007, and 2009, focused on regional patterns of annual sales, firm composition, business practices, employee benefits and compensation, and how ACRA can benefit the industry. The independently collected and analyzed results provide essential longitudinal information on the state of the CHM industry. This paper focuses on the results and challenges of conducting these surveys, which provide qualitative as well as quantitative views of CHM and its practitioners.

**B07.12: Discovering the Archaeologists of the Americas**

by **Jeffrey Altschul** (*Statistical Research, Inc./SRI Foundation, USA*)

Discovering the Archaeologists of the Americas (DAA) is a proposed project sponsored by the Society for American Archaeology, which will collect, analyze and share information about working in archaeology in North, South and Central America and the Caribbean. The intention is to complement a concurrent project, Discovering the Archaeologists of Europe, which is expanding and updating the study performed five years ago. Much like its European counterpart, DAA will gather information about employment and qualifications of archaeologists throughout the Americas. DAA also will examine ethical issues, such as interrelationships between archaeologists of one country working in another. At the roundtable, I will present the status of the task force established to design the survey.

## Session B08

### Heritage Issues in Europe's Historic Cities

Friday, 6 September 2013, 08:30–13:00

Room: EU 109 (Building 1, ground floor)

**Organisers:** **Valerie Higgins** (The American University of Rome, Italy) and **Donald Henson** (Freelance Consultant in Public Archaeology and Education from York, UK)

The historic cities of Europe are considered by the rest of the world to be heritage jewels, vital to local and national identity and an important source of revenue through tourism. However, in reality they present many problems. The growth of international tourism has often led to gentrification and rising prices which have pushed out local people and can result in the historic centres being deserted in the evening. The narrow streets and small squares are easily overwhelmed by tourist groups that destroy the very atmosphere that they have come to enjoy. Conservation costs can soon outstrip income raised. In addition the changing political configuration of Europe after the 2nd World War and after the fall of Communism has led to changing perceptions of identity and/or sites of contested heritage. This session will explore the heritage issues experienced in historic cities and explore the role historic cities should play in the future.

#### **B08.01: Heritage in 'conflict-time' in the contested city of Vukovar**

by **Britt Baillie** (*University of Cambridge, UK*)

In contested cities, history and heritage are manipulated and selectively mined to serve exclusivist claims to rights and territory. The term 'post-conflict' is a misnomer often applied to these cities—conflating the cessation of armed violence (although not structural violence) with 'peacetime'. Yet, in these cities ethnic divisions persist and tensions continue to run high—the city lingers in the limbo of 'conflict-time'—a term defined not by the presence or absence of violence but rather by an on-going sense of heightened unease and contestation. Recent experiences of violence, ethnic cleansing and incarceration make the 'frontlines' between different memory discourses even more entrenched. Unlike juridical processes, truth and reconciliation programmes and other mechanism for addressing the past which are subject to public scrutiny, Croatia—like most other nations—has not developed analogous expectations for heritage management (Brett, et al 2008:2). Interpretation at heritage sites are not obliged to take into account alternative discourses, to serve the needs of the minority 'public' or to adhere to any code of conduct. This paper will portray how heritage in Vukovar has been used to provide a sense of justice for the 'In' group whilst reifying the differences between ethnic groups. It will explore how (in future) collective memory could be used to assist the individualization of guilt and to move beyond the dichotomized 'perpetrator'/'victim' framework."

#### **B08.02: Killing with Kindness: How Historic European Cities are Struggling to Cope with their Popularity**

by **Valerie Higgins** (*The American university of Rome, Italy*)

The old centres of European cities represent, for many, a quintessential part of European identity. Once frequented only by an elite group of wealthy travelers, globalization and the spread of low cost airlines have ensured that Europe's historic cities can now be visited by everyone. But such democratization brings with it challenges that threaten to overwhelm and even destroy the very product that is so admired. Rome is a prime example of this trend. The press of tourists and increase in traffic has resulted in physical damage to the heritage that many think is not sustainable. On an economic level becoming an international tourist venue results in gentrification that raises prices, drives out the local resident population and is a barrier to other economic development.

#### **B08.03: What, when, who, why, where, how, how much, how long? Few questions in case of cultural heritage prevention and care in Rome**

by **Pier Matteo Barone** (*American University of Rome, Italy*), **Carlotta Ferrara** (*University of Roma Tre, Italy*), **Elena Pettinelli** (*University of Roma Tre, Italy*)

The term "heritage" has a strong claim: it dogmatically brings to mind something positive, in an absolute sense. Today, the term "Cultural Heritage" transcends its positive meaning and almost assumes a hieratic quality. Rome, one of the most important cultural sites in the Europe and in the World, raises questions about how we should respond to the conservation issues posed by modern interpretations of Cultural Heritage. This paper will reflect on future directions for scientific researches in cultural heritage conservation: how this research influences conservation practice, and vice



versa. What will be the future challenges in conservation, and what sort of science will these require? And, how much will it cost?

One of these scientific methods is completely non-invasive, and contributes to creating site strategies, to conservation and preservation planning, geophysics. Geophysical survey techniques can be used to examine historic structures, and their surrounding properties and are especially useful in urban contexts, like Rome. In particular, Ground Penetrating Radar has recently become the most important physical technique in cultural heritage preservation. Here several case histories in Rome will be analysed, starting from the incredible (and preventable) collapse of the Nero's Domus Aurea.

#### **B08.04: Cities as sites of commemoration: Whose heritage?**

by **Donald Henson** (York University, UK)

This paper will explore the presentation of heritage within a part of London: on the south bank of the River Thames, at Southwark. It will look at the differences in treatment between national and local heritage sites. Issues to be covered will include who designates heritage, and the tensions between commercial and non-commercial heritage sites.

The south bank area of Southwark contains a number of heritage sites: HMS Belfast, the Golden Hinde, Winchester Palace, the sites of the Globe and Rose theatres, the modern Globe Theatre and less obvious heritage sites like the Clink Prison and a Victorian prostitutes' cemetery. The ownership of these sites and their designation as 'heritage' is very varied. The area exemplifies in microcosm the tensions involved in how we define and accept heritage, including issues of commercialism and democratisation.

One of these sites illustrates a bottom-up democratised heritage that receives little official recognition. I will argue that our definitions of heritage worth conserving and presenting to the public are still national and elitist rather than local and popular.

#### **B08.05: The heritage values of Radziwiłł Palace in Dubingiai**

by **Albinas Kuncevičius** (Vilnius University, Lithuania), **Rimvydas Laužikas** (Vilnius University, Lithuania)

Dubingiai is a small town in Molėtai District, near Vilnius and Lithuania's longest lake, Asveja. The remains of the 15<sup>th</sup>–17<sup>th</sup> Century palace of Duke Radziwiłł of Lithuania, and the church, still survive on Castle Island. Before 2003 Castle Island was disused as heritage object and its value was "frozen". Between 2003 and 2010 the castle site at Dubingiai was investigated and its heritage value was re-established. The entire complex was excavated and non-intrusive test and fixation methods were used on one Lithuanian archaeology object.

The Cultural Heritage Department organised the conservation of the foundations of the former Dubingiai church and the construction of a burial crypt and sarcophagus. The State Service for Protected Areas and the owner of the castle site, Asveja Regional Park, took over the care of the mountain environment and the adaptation of the area for tourism. The discovered and identified remains of the representatives of the Radziwiłł family of the Grand Duchy of Lithuania were solemnly reburied on the Dubingiai castle mound on 5 September 2009. The unearthed palace remains are displayed under a special, modern museum shell. The scientific research results have been fully opened for scholarly communication by articles and a two monographs.

#### **B08.06: Pula – good and bad examples of heritage industry**

by **Maja Kuzmanovic** (Independent researcher, Croatia), **Darko Komšo** (Archaeological Museum of Istria, Croatia)

Pula is the city with the long history and many historical monuments among which the most prominent is the Roman amphitheatre from the 1st Century AD, an excellent example of sustainable cultural heritage. On the other side of the coin are cultural sites in the former military zones, (demilitarized between 2003 and 2007), which triggered series of wide public debates, even conflicts, between civil society and government who want to use these huge areas for elite tourism. Intentions of investors to exclude the needs of civil society for the sake of exclusiveness of users are symptoms of deep financial and cultural crisis par excellence.

### **B08.07: Fostering a Spirit of Place: the historic urban environment and realising the Norwich Accord**

by **Brian Ayers** (*University of East Anglia, UK*)

The Norwich Accord, a document entitled *Finding the Spirit of Place: Conservation, Communities & Cultural Tourism*, was adopted by ICOMOS-UK in 2009. It provided a statement of conservation principles addressing cultural heritage conservation and responsible tourism. The Accord is particularly applicable to urban locations and maintains that the concept of Spirit of Place is central to protection of the historic environment. It seeks to foster a shared responsibility of both communities and visitors as active players in destination management. Such an approach requires understanding of urban places and this paper will therefore examine the contribution of the urban archaeologist, as a provider and interpreter of historic environment information, towards cultural tourism management. Archaeology can explore how places evolved and were used. It can also inform future development and utilisation, helping to foster the spirit of place. The paper will take as its example Norwich itself, a major English medieval city, one seeking to conserve its past while ensuring that it is fit-for-purpose in the 21<sup>st</sup> century.

### **POSTER**

#### **B08.01-P-4: Archaeological heritage of medieval Vologda: studying, promoting, preservation problems**

by **Larisa Andrianova** (*Regional Center of Additional Education, Russian Federation*), **Natalia Vasilyeva** (*Regional Center of Additional Education, Russian Federation*)

The ancient Russian city of Vologda founded in 1147, is 450 km to the north of Moscow. In recent years the attention of archeologists has been drawn by the little-studied territory on the borders of the fortress of Ivan IV (Ivan the Terrible). Here archaeological layers of the 15th to 18th Centuries remain. During this period Vologda, which had been mainly built of wooden houses, represented a considerable settlement stretching for 5 km on both banks of the Vologda River. In 2008–2011 more than 500 sq.m were excavated in the central part of the fortress with the archaeological layers extending more than 4 m in depth. During the excavations there were recorded 8 construction horizons between the end of the 15th to the beginning of 19th Centuries. Thanks to a damp archaeological layer, organic materials (wood, leather, bones, fabrics) were perfectly preserved. During the excavations a part of the medieval street with well preserved remains of wooden constructions was found. Rich collections of jewelry, weapons, labor tools, household things of medieval residents of Vologda were collected. On the basis of the received materials there was in an exhibition, which caused a great interest at the Vologda residents.

## Session B09

### Identity and Heritage: Contemporary Challenges in a Globalizing World

Thursday, 5 September 2013, 14:00–18:30

Room: EU 109 (Building 1, ground floor)

**Organisers:** **Hilary Soderland** (University of California, USA), **Doug Comer** (Cultural Site Research and Management, USA / ICOMOS) and **Christopher Prescott** (University of Oslo, Norway)

Session Sponsorship: The International Scientific Committee on Archaeological Heritage Management (ICAHM), a scientific committee of the International Council on Monuments and Sites (ICOMOS)

The proposed session is the second of a two-part biennial series and represents an initiative between the Society for American Archaeology (SAA) and the European Association for Archaeologists. The 2013 sessions not only explore the various sides of identity and heritage issues but also try to explicate contentious issues facing archaeology and heritage management in a dramatically changing world. The objective of the EAA session is to present variable experiences from a New and Old World, but also to discuss the need in “a shrinking world” to look beyond national and regional contexts. If the heritage sector and archaeology are to remain relevant in our contemporary world and in the near future, then there are a number of questions concerning the politics, practices and narratives related to heritage and identity that should be addressed. The relevant concerns do not necessarily pull in one direction. Questions of relevance in an affluent, cosmopolitan setting are at odds with those relevant for a region emerging from civil war or ethnic strife, or a national minority battling oppression or ethnic cleansing. A premise is that heritage represents a broad scope of empirically and theoretically sound interpretations, but also that heritage is a response to contemporary contexts, as much as data. It is therefore necessary to evaluate constantly what is scientifically accurate, and also what is valid and relevant and what can have a contemporary impact.

#### **B09.01: Conceptualizing Cultural Heritage as a Commons**

by **Pablo Alonso González** (University of Cambridge, UK)

This paper explores the ways in which a theorization of heritage as a commons complicates the relation of heritage and identity. The paper analyzes how cultural heritage management and theorizations connect with the ‘old’ vernacular commons in rural Europe, communist ideologies, Hardin’s and Ostrom’s theories, and finally with Hardt and Negri’s ideas. Can heritage managers and scholars work as mediators between the global flows of value and local communities, promoting redistributive policies and identity building capacities in the face of overarching commodification processes? How can the notion of a “shared” heritage be mobilized by local communities to implement politics of redistribution and rethinking of ownership against an alienated “world heritage” that frames itself as a globally “shared” common heritage of humanity? What are the consequences of treating heritage as a commons for identity politics?

#### **B09.02: Digging World Cultural Heritage Sites: National vs International Heritage Interpretation and Management**

by **Peter F. Biehl** (University at Buffalo, USA), **François Giliigny** (Université Paris 1, France)

This paper presents the first results of the international research project ‘*From excavation to world heritage: new approaches to archaeological heritage management*’ and discusses two case studies of World Heritage Sites: the prehistoric villages at Çatalhöyük in Turkey, and the prehistoric flint mines in northern France and Spiennes in Belgium. The paper will focus on standardization of training programs for international masters students in Cultural Heritage Studies in the converging as well as diverging areas of national and international heritage interpretation and management. Both case studies provide practical information to shed light on most aspects of *heritage*, from excavation to scientific practices of conservation and reconstruction, to economic and ethnographic evaluation of local impacts and the encouragement of local involvement in work at the site, to methodology and contents in museum presentation, both material and digital, to local, national and international policy regulations. The paper will also propose an exemplary and complete process by which to enroll and study archaeological sites with the potential to become well-protected World Heritage Sites.

### **B09.03: The Frontiers of the Roman Empire World Heritage Site and transnational heritage**

by *Richard Hingley* (*Durham University, UK*)

This paper provides an initial assessment of current discussions about the Frontiers of the Roman Empire (FRE). It addresses the variable regional response to the idea of the incorporation of Roman frontier structures into this transnational WHS. It addresses the genealogy of idea of classical Rome, exploring how this image was appropriated by the 'West' in colonial times along with the potential difficulties this creates with the Image of Rome in certain areas that rim the Mediterranean. It addresses the ways that the Roman frontier is drawn upon in heritage discourse as an inclusive structure, an idea that draws upon the culturally-inclusive nature of the Roman Empire. It also explores the potentially divisive nature of the FRE as landscapes built to control and limit access into a former empire, assessing the ways that this function reflects current EU frontier policy. This paper forms part of a provisional attempt to commence a discussion of the range of values of Roman frontier heritage at a variety of local, national and global scales throughout the lands that once formed the periphery of the Roman Empire.

### **B09.04: Identity and Authenticity: Architectural Destruction and Manipulation of Heritage in Turkey**

by *Veysel Apaydin* (*Institute of Archaeology, University College London, UK*)

Architectural representation of heritage is often being considered as symbols of different ethnic groups. Architectural heritage represents something more powerful for society, certain group of people, the public and the past. It is a strong symbol of identity indeed. Hence, dominant powers, usually States, have always intended to manipulate or never accepted their existence of this kind of representative and symbolically significant heritages. Although many ethnic groups' heritages have been recognized and work has been done for their preservations and conservations in recent decades in Turkey it is still not sufficient for the protection and management of these heritages and archaeological sites. In this paper, I am going to talk about why heritage is important for identity and how minor ethnicities' heritage have been manipulated in Turkey, then I will also talk about the position of Archaeologists, who also works for states, in this dilemma.

### **B09.05: Identity and Heritage in the global city: the Barbican Estate, London**

by *Caroline A. Sandes* (*Independent Researcher, UK*)

The listed Barbican Estate is a modernist estate on the edge of London's historic core, the City, that contains in situ Roman/medieval city wall sections and a listed church. It is an historic place with a specific identity. Those that live and work in the Barbican strongly identify with it, but it is reviled by others as an ugly, impenetrable behemoth.

This dichotomous response/feeling towards a specific urban place is seen with a variety of urban places. Often poorer communities living in older areas derive a similar sense of identity from them, but because they're less well-defined or have become run down or damaged during conflict, they are derided by others as fit only for redevelopment, ultimately leading to the loss of the community, its heritage and identity in all but the most superficial sense. In this globalising world is there no space for the idiosyncrasies of actual communities' heritage, only for a kind of neutral disneyfied heritage? Do places like the Barbican only survive because of a wealthy, self-assured community that can protect itself? Can we learn anything from this place that can be applied to protecting other urban communities and their heritage? This paper will examine these questions.

### **B09.06: Heritage and migration – the Spanish case**

by *Margarita Díaz-Andreu* (*ICREA-Universitat de Barcelona, Spain*)

Spain is a country in which several nationalisms are in competition. In opposition to an encompassing Spanish nationalism, others claim their national uniqueness in Catalonia, the Basque Country and Galicia. For two centuries, the work of archaeologists has provided data for the creation of the various national discourses. Nationalisms in Spain are mainly based on language, territory, a distinct historical development and culture. These nationalisms are not monolithic, unchanging discourses and in each of them there are competing views. National discourse, in practice, changes continuously and needs to be continuously recreated. Recently, nationalisms in Spain have faced a new challenge: the massive arrival of immigrants. In the last two decades the composition of the population has changed dramatically in all parts of Spain. The rapid expansion of the Spanish economy from the 1980s to 2007 required new labour and this meant that if in 2000 only c. 2% of the total population in Spain was foreign, a decade later this percentage had increased to 12.2% (2011 figure). This paper will discuss archaeologists' reaction to immigration and the resulting transformation in the makeup of the population in Spain.

**B09.07: The Heritage Sector in a Multicultural Society. A discussion from a Swedish perspective**

by Anders Högberg (Linnaeus University, Sweden)

The last 10 years have seen an increased awareness within heritage studies and the heritage sector concerning questions of community and identity, and heritage as a political issue within a multicultural society. This has of course influenced the way the sector addresses and works with these issues.

In a recently conducted research study I have analyzed how the Swedish heritage sector has worked with issues of heritage, identity and heritage management in a multicultural plural society over the last ten years (2002–2012).

Based on results from this study I will discuss how the heritage sector understands, deals with and work with heritage and plurality. How are the empirical and theoretical interpretations that heritage represents transformed into day-to-day work? How is cultural identity understood in relation to heritage and multiculturalism? How is this understanding manifested in management, stewardship and administration? How is an understanding of the dynamics between the local, regional, national and supra-national demonstrated?

By comparing results from the Swedish case-study with global issues on heritage and identity I will draw conclusions on issues concerning heritage politics, practices and narratives which crystallize as urgent for the heritage sector and heritage studies to address.

**B09.08: Challenges to outreach and training in the midst of a demographic shift; Norway**

by Christopher Prescott (University of Oslo, Norway)

The demographic shift in Northern Europe poses challenges to narratives and practices in archaeology and heritage. The traditional national and ethnic identity narratives, which have continuously evolved since the 1800's, are probably no longer adequate. In sociological terms, regional archaeology is probably not educating and recruiting candidates that reflect contemporary demography. This represents an ethical, political and potential financial problem. A number of problems have been pointed out concerning the sociology and ideology of the discipline itself. However, what challenges are generated by the heterogeneous groups of immigrant communities?

**B09.09: Archaeology as a Tool in Building New Local Identities: An Insight from Eastern Thrace**

by Zeynep Eres (Istanbul technical university, Turkey)

One of the most outstanding features that we had noted while carrying out a project on documenting and inventorying rural heritage of Eastern Thrace has been the amazing diversity in local practices, evidently due to total population displacement that took place in that region during the last 150 years. Immigrants from the Balkans to Caucasus, taking refuge with the shrinking of Ottoman Empire, replaced local communities that emigrated. Newcomers while bringing in their traditional practices at the same time adapted to the local practices. Until recently, migrant villages were mostly unconcerned with their past identities, reluctant to pass on their identities to new generations. However, in the last decade, with the growing tendency for ethnic identities to surface, immigrant villages became retrospectively conscious of their poorly remembered past. In search for promoting cultural values of their community they began establishing village museums and founding local associations on cultural heritage. Through this process there has been an almost abrupt interest directed towards archaeology, for the first time appealing to our excavations that previously were ignored, anticipating an interface between the past and the present. The paper will be an assessment of the controversies between archaeological heritage and the developing profile of the local communities.

**B09.10: Heritage and Autochthonous Minorities: relations in a Global Economy -The contemporary challenges of Quebec (Canada) and Victoria (Australia).**

by Nicolas Zorzin (Kyushu University, Japan)

In Victoria and in Quebec, a process of compensation for autochthones' land loss is fully integrated into development policies and legislations. However, these regulations, to which archaeological activities must subscribe, are not necessarily aimed at defending the interests of Aboriginals or First Nations. Here, I argue that regulations achieve instead minimal compensation for the continuous injustices of modern dispossession incurred by economic growth. As such, archaeology may have become a powerful device serving globalized corporate interests to manufacture consent within native communities. In Victoria, this process seems to have been achieved by making aboriginal communities believe that archaeology consists of:

1/ 'protecting' the past by simply extracting artefacts from the soil, completely avoiding the analytical and interpretational key aspects that could be relevant for Aboriginal populations in contributing to a process of cultural empowerment.

2/ making the Heritage 'industry' a profitable activity for aboriginal communities themselves, giving them an illusion of empowerment, ironically achieved through the destruction of their own non-renewable heritage, in exchange for a more immediate financial compensation.

Heritage Management has bonded archaeologists and aboriginal communities to the logic of profitability. I argue that this approach to Heritage discourages any political or social interpretations relevant to autochthones populations.

## Session B10

### Integrating non-destructive methods of archaeological resources prospection: implications for research and protection

**Saturday, 7 September 2013, 08:30–13:00**

**Room:** EU 104 (Building 1, ground floor)

**Organisers:** **Janusz Budziszewski** (Cardinal Stefan Wyszyński University, Poland), **Zbigniew Kobylński** (Cardinal Stefan Wyszyński University, Poland) and **Lucie Čulíková** (University of West Bohemia in Pilsen, Czech Republic)

Aerial reconnaissance, geophysical measurements, systematic fieldwalking, LiDAR scanning and geochemical analyses nowadays offer unexpected new opportunities of detecting archaeological sites, especially when these methods – usually employed separately – are integrated within a complex programme of non-destructive prospection. Methodology of such a complex programme still however needs to be developed. These new opportunities also have important consequences for the whole discipline of archaeology, both in the research aspect and in relation to necessary protective measures. Aerial archaeology discovers new types of archaeological sites, previously unknown in many regions of Europe, such as linear pit alignments or circular enclosures. LiDAR scanning enables to read history of forests, previously beyond archaeological visibility. Concept of sites, as isolated places of human past activities, which should be legally protected and managed by conservation services, needs to be rethought in context of aerial archaeology and LiDAR scanning, which in many cases show spatially continuous patterns of landscape use by the past communities, which cannot be easily delimited and protected. Is our discipline prepared to use these new methods in full for the benefit of knowledge and conservation – this is the question we would like to ask during the proposed session.

#### **B10.01: A model of building of the medium and small Gumelnița tell settlements (Romania)**

by **Cătălin Bem** (National History Museum of Romania, Romania), **Andrei Asăndulesei** (Alexandru Ioan Cuza University, Romania), **Carmen Bem** (National Company of the Romanian Highway and National Roads, Romania), **Constantin Haită** (National History Museum of Romania, Romania)

Old and new archaeological researches regarding the Gumelnița tells sites, raised the question on the existence of ditches excavated on to the outside of the area actually inhabited. The developing interdisciplinary investigations on Bucșani tells settlements (Romania, Giurgiu county) put us to a different approach of magnetometric investigations and aerial photos in the project *Chronos*.

All small and medium sized tells settlements sites investigated are delimited by at least one ditch. Most of them are delimitation lines, and remain opened for a long time. All these were dug in the meadow on a cvasicircular track.

Sometimes inward delimitation ditch is doubled by a dike.

Another category consists of ditches – foundation for an enclosure built on a cvasirectangular track around built space. Being dug in anthropogenic sediments and covered soon magnetometric maps makes them difficult to identify.

Precise delimitation of a built space implied its progressive restriction, as anthropogenic deposits accumulate vertically.

This may be one of the reasons of a large number of Gumelnița tell sites – by swarming repeated parts of communities.

The same types of delimitation arise not only of the beginning of the Gumelnița civilization (at 4500–4400 BC) but also at the end (about 4000 BC).

#### **B10.02: Advanced ground penetrating radar applied to landscape archaeology and cultural heritage**

by **Pier Matteo Barone** (American University of Rome, Italy), **Carlotta Ferrara** (University of Roma Tre, Italy), **Elena Pettinelli** (University of Roma Tre, Italy)

If the traditional tools applied to Archaeology (i.e. trowels, shovels, bulldozers, etc.) generally produce, a fast and invasive reconstruction of the ancient past, the results of geophysical instruments seem to go in the opposite direction by giving geoarchaeological information in a quick and non-destructive way. Geophysical survey techniques can be employed to examine historic buildings and structures, and their surroundings, so that archaeologists and other heritage professionals are able to assess the integrity of the structures and, where necessary, take action without resorting to destructive testing methods. In particular, Ground Penetrating Radar (GPR) has recently become the most important physical technique in archaeological investigations, allowing the detection of archaeological targets with a very high resolution, vertically and horizontally. It has been successfully applied both to archaeological sites and for diagnostic purposes in historical and monumental buildings.

In this abstract, we are going to present several examples of successfully applied radar investigations to different case studies such as i) the reconstruction of the urban development of a partially excavated ancient city; ii) the possibility to bring to light a new archaeological site; iii) the diagnostic investigations before planning the restoration of ancient buildings.

### **B10.03: Satellite-assisted archaeological survey in the Silvretta Alps**

by Karsten Lambers (University of Bamberg, Germany), Igor Zingman (University of Konstanz, Germany)

Archaeological survey in high altitude areas, e.g. the Alps, is a challenging task. While settlement sites are restricted to areas below the timber line, important vestiges of seasonal resource use, such as ruins of huts and livestock enclosures, can be found beyond that limit, often widely dispersed over vast areas that are difficult to access. Thus, to be efficient, ground survey needs to be combined with, and assisted by, other means of locating archaeological structures and sites.

In the framework of the Silvretta Archaeological Project, on the Swiss-Austrian border, we are currently developing methods to automatically detect possible archaeological sites in high-resolution remotely sensed images. Starting from a sample of documented sites and buildings associated with alpine pasture economy, or *Alpwirtschaft*, our approach is to develop algorithms capable of detecting such structures in satellite and aerial images based on geometric cues. The intended end product of our workflow is a map of our study area that indicates the probability of the presence of objects of our interest. Such a map can be used to guide and assist archaeological fieldwork.

In this paper we present the rationale of our research, an outline of the workflow, and the steps accomplished so far.

### **B10.04: Applying historical maps in GIS for archaeological research and prospection. A case study from Estonia**

by Martti Veldi (University of Leiden, The Netherlands)

The paper concentrates on methods of applying historical maps in GIS software for archaeological research and prospection. Aspects of future usage in heritage management, especially on landscape scale, are proposed as well.

The digital analysis of historical maps with GIS software (e.g. MapInfo, ArcGIS,) implies that the physical maps stored in the archives are digitalized into raster images, georeferenced, and supplied with vector and spatial data of known archaeological sites. Digitised historical maps are then incorporated into a unified dataset with contemporary aerial photomaps, soil maps, DEM and LiDAR data. This provides a coherent sequence of land use in the past enabling to create a spectrum of landscape conditions (soil, vicinity of water, direction of slope, previous settlement pattern etc.) for effective prospection of new sites. The method applied also enables to draw more detailed conclusions on the connections and distribution of archaeological sites in the landscape for academic research.

The case study presents some of the results on the study of a landscape region in East Estonia, where archival land use maps from 17<sup>th</sup>–20<sup>th</sup> were combined with archaeological and spatial data.

### **B10.05: You can't make an omelette without breaking some eggs: why a little bit of invasive research could go a long way**

by Wieke de Neef (University of Groningen, The Netherlands)

This paper presents the integration of non-destructive methods in a landscape archaeology research project conducted by the authors in southern Italy. The project integrates LiDAR, geophysics, field walking and the mapping of taphonomic processes, on a local and a landscape scale. The integration of these diverse datasets in a GIS allows us to spatially correlate archaeological surface scatters and geophysical anomalies. A large-scale combined pedological and geophysical survey in transects across the landscape is used to establish background values against which to distinguish archaeological anomalies. Airborne LiDAR data helps map the effect of slope processes and allows the interpretation of some geophysical anomalies in terms of geological features. In contrast to what the session abstract suggests, we believe a minimally invasive approach (coring, test pits) is necessary to confirm assumed associations, document site preservation, and establish the relation between archaeological stratigraphy and taphonomic processes. We will discuss the following implications of our approach:

- testing and revising basic assumptions about our own research methods may lead to a general critical evaluation of current and future landscape project designs;
- in terms of conservation, mapping the condition of the archaeological record in different landscape zones allows effective management plans to be drawn up.



#### **B10.06: Reinterpreting old landscape applying new spatial technology**

by **Alfredo Maximiano Castillejo** (Universidad de Cantabria, Spain)

In recent years, there have been remarkable advances in the use of spatial technologies as archaeological survey tools such as *predictive models* and LiDAR technology. While they have served to strengthen and advance new directions at landscape research and heritage management. Yet we must bear in mind that the extensive use of *remote sensing technologies* and *spatial prediction modeling* must go beyond merely adding a degree of technical and methodological sophistication to the production of certain archaeological outputs. While these results may be aesthetically appealing and thus produce a significant visual impact, they can also be devoid of empirical content.

This contribution is an example about synergy between predictive models and LiDAR technology applied with a significant success rate into a mountainous area (North of Burgos, Castilla y León; Spain) which has a complicated relief and dense vegetation coverage. In the study area, there are documented (see Bohigas *et al* 1984; Sacistrán de Lama 2007) no less than 6 different archaeological sites and the archaeological potential of this sector is more than this number.

We present results and workflows for a congruence programme in terms of addressed survey and recognition of potential archaeological sites where the relationship between predictive models localities and DEM from LiDAR data allowed new potential archaeological structures.

#### **B10.07: The use of non-invasive survey in protecting the archaeological landscape. The Muszkowice Forest case study**

by **Agnieszka Przybył** (Institute of Archaeology, University of Wrocław, Poland)

The aim of this paper is to present a case study of Muszkowice Forest – an example of a sacred landscape marked by the presence of dozens of prehistoric and early medieval barrows.

Non-invasive survey, carried out with the use of LiDAR scanning, field walking and geophysical measurements, helped us to identify the valuable cultural resources hidden in a dense forest. The application of GIS methods and spatial modeling allowed us to make additions to the records of heritage conservation services. The inventories with detailed contour maps, three-dimensional representations of the surveyed archaeological sites and shape measurements of the barrows have been made. Thanks to the use of non-destructive methods it was also possible to detect damages to monuments and to assess their state of preservation.

The use of non-invasive survey provide us with a basis for studying archaeological landscape of prehistoric and early medieval times, materialized in the sacred places of the Muszkowice Forest. That allow us also to plan further activities aimed for the protection not only individual monuments and archaeological sites, but the entire cultural landscape humanly created in the past.

#### **B10.08: Mining landscapes and LiDAR application**

by **Ondrej Malina** (University of West Bohemia, Czech Republic), **Pavel Veselsky** (University of West Bohemia, Czech Republic)

Surface remains of old mining activities form a specific branch of cultural heritage. LiDAR or ALS data offer an important tool for discovering, documenting and protecting these sites. Efficient heritage care requires good knowledge of both historic value and spatial extent of the relief relicts.

Data interpretation is a crucial phase of understanding the monuments. A catalogue of all potential feature types as recognized from the visualized data could help us to interpret both previously known and unknown types of relicts of historical mining.

ALS data also enable us to assess quantities of particular monument types in larger areas and help us to demarcate particular “sites”. Spatial context of relicts is also important and includes not only proper mining traces but also spatially or temporally coherent relicts of settlements or communications.

This paper discusses possibilities and limitations of LiDAR-based typology of mining relicts and presents both technological framework and its results.

### **B10.09: Mystification within Archaeological Prospection: Real and Virtual**

by Lukas Holata (University of West Bohemia, Czech Republic), Jindrich Plzak (University of West Bohemia, Czech Republic)

The issue of false objects is symptomatic of all remote sensing methods. During aerial prospection, some traces on the ground can confuse archaeologists and can evoke traces of human activities by their form or configuration (for instance the well-known "fairy rings"). A new dimension has been opened in this issue by airborne laser scanning. Researchers have to deal with new kinds of false objects which mimic earthworks in various visualizations of digital terrain model (DTM). These can be divided into two main categories: objects which really occur on/in the terrain (drifts of branches, bushes, recent disturbance of the ground etc.) and objects which were generated by an inappropriately chosen filtration of data, interpolation algorithm or by highlighting unsuitable visualization method and they are not present in the terrain (or they are over-emphasised in DTM). This paper critically evaluates this issue. It is based on a combination of LiDAR data and surface survey of several transects in forested landscape. Occurrence of both object categories will be tested for various types of raw LiDAR data with diverse density of echoes and for several types of sites (hillfort, burial mound or deserted medieval village).

### **B10.10: The exploration of landscape development and its changes during the 20th century in the borderlands of West Bohemia via modern archaeological non-destructive methods.**

by Lenka Starkova (University of West Bohemia in Pilsen, Czech Republic), Michal Rak (University of West Bohemia in Pilsen, Czech Republic)

This project forms a part of a newly expanding discipline – the archeology of the 18th-20th century and its subdiscipline of so called „conflict archeology“ with a special emphasis on the use of modern methods of landscape archeology. The main aim of the project represents the identification of sites associated with the political events of the 20th century (the Iron curtain, deserted villages, military monuments etc.) in the area of borderlands of West Bohemia. The primary methodology consist of the identification and mapping of anthropogenic relics on the basis of airborne laser scanning (ALS) data, subsequent verification in terrain, documentation of current status and observation of spatial relationships in wider landscape context. The identification of individual sites was realized through the combinational analysis of remote sensing data (ALS, aerial photography) and non – destructive surface survey. For the purposes of mapping and prospection of immovable monuments, there were used modern tacheometrical instruments. The application of individual research steps and its combination leads to the creation of new concept of methodological approach, which will be affiliated to the conflict archeology research.

### **B10.11: Addressing Archaeological Ethics: The Value of Non-invasive Approaches to Landscapes of the Holocaust**

by Caroline Sturdy Colls (Staffordshire University, UK)

The material remains of the camps, ghettos and execution sites of the Holocaust survive in various forms as reminders of the suffering and persecution that took place during this period. Investigations of these remains using archaeological methods have the potential to contribute to commemoration, heritage protection and education. However, such investigations may not be welcomed due to the variety of religious, political, social and ethical issues that surround this period of history. Fortunately, technological advances means that archaeology no longer has to be solely centred on excavation. This paper will outline an interdisciplinary approach which centres on the assimilation of data derived from archival research, remote sensing, topographic and geophysical survey, and cultural memory studies, aimed at characterising, recording and visualising the physical evidence relating to the Holocaust. It will be demonstrated how this approach has allowed the remains of several sites across Europe to be examined in terms of their scientific and historic significance, whilst respecting their religious and commemorative importance. Lessons learnt in the course of this research will be discussed and future directions for archaeological investigations of the Holocaust will be suggested.

## **POSTERS**

### **B10.01-P-3: Innovative Research on Alpe-Adria Historical Landscapes**

by Gian Pietro Brogiolo (University of Padua, Italy), Alexandra Chavarría (University of Padua, Italy), Armando Deguio (University of Padua, Italy)

Within the context of a more general research program concerning the area between the Alps and the Adriatic islands, the object of this project is to use all available sources to study the diachrony of anthropic landscape in order to reconstruct its environmental, social and economic evolution. The objective of the project is twofold a) on a regional level, to

reconstruct the transformation of the countryside of the sample area in relation to institutional and environmental changes; b) on a micro-regional level, to analyze the evolution over the long period of settlement dynamics in relation to agrarian landscapes and to the management of uncultivated land. Reconstruction of the agrarian landscapes will utilize a) the most efficacious remote sensing instruments and in particular LiDAR laser and radar scans together with the systematic study of the palimpsest of agricultural particles compared with that of historical cartography (from the XV century onwards); b) systematic geophysical prospecting of the land; c) paleoenvironmental reconstruction; c) systematic land surveys. The paper intends to present the first results obtained by the project.

#### **B10.02-P-3: GIS supported archaeological prospection in Northern Greece. Anthemountas Valley Archaeological Project application**

by **Janusz Czebreszuk** (Adam Mickiewicz University in Poznań, Poland), **Stelios Andreou** (Aristotle University of Thessaloniki, Greece), **Maria Pappa** (16th Ephorate of Prehistoric and Classical Antiquities, Greece), **Jakub Niebieszczański** (Adam Mickiewicz University in Poznań, Poland)

Due to the existing policy to conduct a non-invasive methods in archaeological researches, geodetic and GIS supported field prospection are the key for gathering new information both for scientific and heritage purposes. The application of geoinformation methodology for planning, conducting and evaluating prospecting offers a new quality in archaeological researches.

Since 2010 during Anthemountas Valley Archaeological Project a series of digital methods were implemented to support field works. With the use of ESRI software, Leica Geosystems geodetic equipment, three prehistoric sites were documented and preliminarily proposals were made concerning their chronological sequence and spatial range.

The following presentation shows the results of those effects and usefulness of geodetic and geoinformation methods in nowadays standards for archaeological data acquisition.

#### **B10.03-P-3: GPR in park archaeology: example from 19th c. Užutrakis manor (Lithuania)**

by **Linas Tamulynas** (Vilnius University, Lithuania), **Vaidotas Suncovas** (Vilnius University, Lithuania), **Dainius Micheliūčius** (UAB "GeoBaltic", Lithuania)

The archaeological investigation in Užutrakis manor (near Trakai, Lithuania) dates back to 1998 due to a restoration project. The manor's private park was created in 1898 by Édouard André who was a famous 19th c. French landscape and park architect patronized by the European nobility. This poster discusses the use of GPR in park archaeology as an effective tool for detecting archaeological features which have been previously omitted from the research scope.

The geophysical survey was done at the minor parterre using GPR Zond12a and receiving 400 MHz antenna. Although the primary aim of this survey was to locate buried sculptures and pathways, outlines of four flower gardens were detected beneath the flat lawn. Gardens were circular at the top and cross shaped at the bottom of the outline.

The mystery of this geophysical anomaly was identified during archaeological research in 2010. We found that a sapropel layer which was used for the parterre drainage was finely sectioned according to the shape of the flower garden, thus creating these 3D profiles.

This investigation helped to reconstruct and adapt the manor parterre and flower gardens to tourism and public needs.

## Session B11

### Methodology in Preventive Archaeology: Mechanization in evaluations and excavations

Saturday, 7 September 2013, 08:30–13:00

Room: EU 108 (Building 1, ground floor)

**Organisers:** **Pascal Depaape** (The French National Institute for Preventive Archaeological Research, France), **Alain Koehler** (The French National Institute for Preventive Archaeological Research, France), **Surja Lela** (Archaeological Service Agency, Albania), **Albana Hakani** (Archaeological Service Agency, Albania) and **Harald Stäuble** (Archaeological Heritage Office Saxony, Germany)

The process of mechanization in archaeological evaluations and excavations is an unavoidable phenomenon.

In Europe, this is very variable, well advanced in some areas but ineffective in others. The concept of mechanization is often perceived only in the context of the earthwork (dig, move, fill, evacuate...) and must be placed in a broader context: Mechanizing is using a machine in an activity, and if the necessary energy for machines operating is thermal or electrical, it remains to be controlled by people. One can thus imagine that the use of vacuum to excavate a burial is a form of mechanization, replacing use of tools such as brush and small shovel. The pathways to change are always accompanied by fear, reluctance, especially when that particular change is not initiated by the users themselves: Fear of deterioration in the quality of produced information, reluctance to change habits, acquire new skills. The effective risk of a simplistic vulgarizing of mechanized tasks, therefore inevitably unsuited, must not be an obstacle for mechanization, but should be considered for what it is. In addition, the minuteness of a hand search doesn't guarantee its quality, and some radical positions will probably need to be reconsidered. This means that the demonstration of the validity of the practice is well presented by the operators involved in the process of mechanization. And then, there cannot simultaneously operate two schools, one of the "all manual" and the other "all mechanical", both equally inappropriate: the best solution is in their complementarity, balanced in each case. The use of machinery is not a solution "plug and play" but must be integrated into a controlled process of scientific objectives. Machines can be directly employed in the search of archaeological remains ("search workshops"), either in the detection (metal detector, core drill), in digging and stripping (small excavators, jackhammers), cleaning (vacuum cleaners, mechanical brush rollers), removing (treadmill, trucks, wheelbarrows mechanical caterpillar and other handling equipment, crane), photographing (UAVs), measuring (tachymeter, pantographs) etc.

They can also facilitate or permit search workshops: transport equipment, levies, remove, arrange access, carry out works to clean up the site, put up barricades to protect, etc.

Finally, mechanization should be considered for its qualitative gains, too often left unnoticed. It is not dogmatically imposing new ways of doing things, judged to be the most appropriate, but to be part of the movement continuously improving our ways of doing, as well as improving the quality of field observations and thoughts associated with them.

The session aims to discuss these aspects of the introduction of mechanisation into field processes of different contexts and objectives undogmatically and in a general overview.

#### B11.01: Why and how mechanize excavations?

by **Alain Koehler** (*The French National Institute for Preventive Archaeological Research, France*)

Mechanization of excavations is an unavoidable subject and a central issue in terms of scientific quality and money saving.

The discussion should not focus on the principle of mechanize or not mechanize, but, on case-by-case basis, on the adequacy of the scientific objectives and the methods and techniques that can be mobilized as well as on the balance between manual search and search mechanized.

Speed of execution, technical constraints and the dangerousness of equipment and machines prohibit hasty implementation and required to anticipate every action but also to rethink our practices and thus initiate process analysis.

These analyses are needed to assess the relevance of the degree of mechanization or automation implemented.

Beyond the general aspects of the worksite organization, it is not only necessary to properly size each workshop (excavation and assistance in the search), but also to foresee interferences.

The succession of workstations for a mini excavator, for example, must be conceived to take into account the impact of terracing on the access to the following positions.

We are only at the beginning of the formalization of this know-how, but we hope that through some situations type we can illustrate the importance of acquiring these skills.

#### **B11.02: Comparing methods of preventive archaeology in two open-pit lignite mines in Saxony, Germany**

by **Carmen Liebermann** (Archaeological Heritage Office Saxony, Germany), **Saskia Kretschmer** (Archaeological Heritage Office Saxony, Germany)

Archaeological investigations in open-pit lignite mines require a specific set of methodologies and an appropriate degree of mechanization. In the present work, we compare archaeological investigations of the Peres mine in western Saxony and the Nochten and Reichwalde mines in eastern Saxony, Germany, highlighting similarities and differences in methodological approaches used in these sites.

The basic prerequisites between the Saxonian lignite mining sites are comparable, including the potential for large-scale investigations due to the eventual destruction of the area and an identical administrative body. These similarities translate to the implementation of similar methods, such as the use of tachymeters, laptops and CAD-software in the field. In contrast, differences in the landscape between sites, including morphological, pedological and climatic factors, lead to differences in settlement development and archaeological research history. This results in the use of different methods, such as hand search and dry sieving on sandy soils or the use of excavators and random wet sieving on loess. By comparing techniques used in open-pit mines in western and eastern Saxony, we present the potentials and limits of different kind of methods and the pros and cons of mechanization of the archaeological investigations.

#### **B11.03: Using large-scale sieving on excavated sites in North-Eastern France. Principles, problems and achievements**

by **Christophe Laurelut** (Institut National de Recherches Archéologiques Préventives (INRAP), France), **Marie-Pierre Petitdidier** (Institut National de Recherches Archéologiques Préventives (INRAP), France), **Vincent Riquier** (Institut National de Recherches Archéologiques Préventives (INRAP), France), **Laurent Thomashausen** (Institut National de Recherches Archéologiques Préventives (INRAP), France)

Working with mini power showels is now commonplace on archaeological sites, although in many cases, this technique is still considered as a last resort at the end of an excavation. Thought of as coarser than hand-digging (a questionable assertion in such general terms), one main shortcoming of mechanical diggings comes from the – manual – collection of objects, often limited to the most visible ones.

The mechanical sieving of the whole excavated sediment is a way to overcome that loss, and to recover most of the archaeological material. Large-scale sieving associated with strongly mechanised excavation has been extensively used in Lorraine since the beginning of the 90's. More recently, it has also been recursively used in Champagne, sometimes on very large excavations (more than 10 ha stripped off) too big to be excavated with conventional means alone.

From a technical point of view, the applicability of this method needs to be carefully evaluated against the specific contexts of sites and the nature of the archaeological features. But it also deserves to be examined from a scientific perspective, comparing its results with more « usual » ways of digging sites and evaluating the scale of observation it allows, within and between sites.

#### **B11.04: The rescue excavation „Lulishtja 1 Maj“ in Durrës (Albania) – methods and results**

by **Gjergj Frasher** (Foundation, Albania)

The Albanian state ratified the Valletta Convention (1992) only in 2008 and subsequently started with the creation of administrative infrastructure and a new legal framework for rescue archaeology. In 2010 the first professional and successful rescue excavation of Albania was carried out in the ancient city centre of Durrës, (“Lulishtja 1 Maj”). The 5.000 m<sup>2</sup> large area was excavated in 4 month by the Albanian company “AKeR”.

During the excavation were explored a well-preserved roman town quarter, remains of the illirian-hellenistic town, as well as early Christian buildings and funerals of the byzantine period.

Because of the time pressure the archaeologists worked within a strict organisation-concept and with the most modern technological equipment (e.g. 3-D-Laserscanning).

Adhering strictly to the stratigraphic method this rescue excavation almost transformed into a scientific excavation, which for the first time determined exactly the cultural horizons of the ancient Durrës. It was also the very first case in Albania, that an investor paid for the excavation and could even be convinced to preserve some important structures *in-situ*. So this excavation marks the beginning of a new era in the rescue archaeology of Albania in accordance with the Valletta Convention and the modern European excavation and documentation directives.

#### **B11.05: 12000 years of human occupation, 3 meters deep stratigraphy, 12 hectares... The necessary mechanization of the archaeological excavation at Alizay (Normandie, France)**

by *Cyril Marcigny (INRAP, France), Sylvain Mazet (INRAP, France), Bruno Aubry (INRAP, France)*

An archaeological operation conducted by INRAP (The French National Institute for Preventive Archaeological Research) revealed that banks of the Seine River in Alizay (Normandy, France) were occupied during 12000 years.

In an extensive area of twelve hectares, archaeologists had to pass through a three meters deep stratigraphy covering the Middle Age, the Iron Age, the Neolithic, to finally reach the earliest settlement from the upper Palaeolithic.

The specifications of the excavation were to study these various occupations applying the proper methodology to each major period. According to the area, the volume of earth and the schedule, this work had to be mechanized.

Until six 24t caterpillar excavators were employed at the same time during the digging in and also to evacuate earth. A robotic total station was used to record very quickly archaeological features and store, directly in the field, pre-formatted GIS data such as number ID, stratigraphic unit, nature of the artefacts, etc. This archaeological data process was aimed to inventory and study during the excavation the 120 000 exhumed artefacts using a database linked to a geographical information system (GIS).

The present communication will discuss these different aspects of mechanization applied to a large scale archaeological investigation.

#### **B11.06: Archaeological strategies in step with present-day economic growth**

by *Susanne Friederich (Landesamt für Denkmalpflege und Archäologie Sachsen-Anhalt, Germany)*

For thousands of years central Germany is intersected by major traffic arteries. As a result, also in consequence of the best soils and rich mineral resources, we have here the highest density of cultural monuments north of the Alps. Today the central German region calls for modern roads and artificial waterways. Current social needs and finally political requirements make it necessary to ascertain the archaeological evidence in question of for example a 40 km long corridor in just 8 weeks.

How? Efficient employment of equipment, perfect planning and above all very good heritage managers and specialized field archaeologists with the utmost experience meet the new requirements, defined by the central German region as a motor of economic development, and even see the opportunity within these challenges.

#### **B11.07: New methods of recording the results of rescue excavations in Russia**

by *Asya Engovatova (Institute of Archaeology RAS, Russian Federation)*

Lately rescue fieldwork has been on the increase in Russia. At the same time both economic and climatic conditions tend to reduce the time frame allotted for excavations. Traditional procedure of archaeological investigations involves the recording of the results of excavations by means of scale drawings and photographs taken in situ. Making drawings by hand during fieldwork is, however, time-consuming.

The specialists of the Institute of Archaeology of the Russian academy of Sciences are therefore badly in need of techniques providing better and prompter recording of excavated materials in field conditions, such as photogrammetry, laser scanning, orthophotoplans, etc. These techniques spare us the digitalization of paperwork, shorten the fieldwork and enable us to record archaeological materials adequately in spite of strict limit on the amount of time allocated for fieldwork.

**B11.08: Mechanization and Geostatistics, towards the creation of documents of decision-making aid in preventive archaeology**

by **Bertrand Moulin** (*Institut National de Recherches en Archéologie Préventive (INRAP), France*), **Mathias Cunault** (*Institut National de Recherches en Archéologie Préventive (INRAP), France*), **Sylvain Badey** (*Institut National de Recherches en Archéologie Préventive (INRAP), France*), **Anne Moreau** (*Institut National de Recherches en Archéologie Préventive (INRAP), France*)

In the particular framework of French rescue archaeology, our aim is to evaluate archaeological potentials by carrying out systematic surveys with the help of mechanical means significant on lands concerned by development projects whose realization threaten archaeological sites. The results of these evaluations will allow the archaeological state departments to consider whether an exhaustive excavation should be carried out or not.

In this context, various internal reflections led us to test theoretical survey strategies to be set up on sites in terms of mechanization and sampling, including the size and spatial distribution of the trenches. In addition, this research on the optimal use of mechanical means favored the establishment of different geostatistical analysis for the creation of documents decision support through spatial and probabilistic approaches such as IDW or kriging.

This presentation aims to describe in detail the impact of mechanization on the practice of archaeological evaluation in France, from the development of different sampling strategies until exploratory analysis favoring the creation of documents useful for archaeological state departments to consider whether an exhaustive excavation should be carried out or not. The different techniques and methodologies, as well as their limits, are presented here.

## Round Table B12

### Mission accomplished – what may Archaeology expect from the new CAP after 2014?

Friday, 6 September 2013, 16:30–18:30

Room: UP 104 (Building 2, ground floor)

**Organisers:** **Ján Beljak** (Archaeological Institute of Slovak Academy of Sciences, Slovakia), **Noémi Pažinová** (Constantine the Philosopher University in Nitra, Slovakia), **Thomas Westphalen** (Archaeological Heritage Office in Saxony, Germany) and **Michael Strobel** (Archaeological Heritage Office in Saxony, Germany)

For three years the EAA and EAC Working Group on Farming, Forestry and rural Land Management has been observing the process of remodelling the Common Agricultural Policy (CAP) that should become effective as of 2013. Some serious attempts were made to bring the interests of a sustainable archaeological heritage management into the decision making on a European and national level. These interests have been articulated as well during a public hearing initiated by the European commissioner Dacian Ciolos in 2010. The final report summing up the results of the debate notes explicitly the importance of the cultural heritage that has been emphasized by many experts and scientists / scholars.

Now the negotiations have reached an advanced and critical state between Commission, European Parliament and Council, but are still far away from the final result. As the new CAP will probably not take effect before 2015, the working group should continue influencing the discussion.

Four years after starting to lobby this process, time has come to hold a further inventory, to reconsider the individual EU Member States, especially the Eastern European Countries and to discuss futures strategies. The round table should have the following agenda:

- Which chances, which risks are arising from the proposals discussed by the EU Commission, Parliament and Council until 2013 for the archaeological heritage? Are there substantial improvements in comparison to the current EU CAP-framework 2007–2013?
- Is there still any possibility to influence the political decision making process?
- Where could the working group lobby for cultural heritage and sustainable land management in the future?
- For a long time Western European farmers, companies and landowners have been investing in Eastern European countries: Which structural differences, which practices of land management, which problems are characterizing the situation in the Baltic countries, Poland, Czech Republic, Slovakia, Slovenia, Hungary, Rumania and Bulgaria? Which requirements have to be taken into consideration?
- What will be the achievements in the Western European countries until 2013? What could these countries expect from the coming CAP? How is the European framework implemented on the national or even federal level?

Especially participants from Eastern Europe states as well as non-members are invited to present their view on the situation in their countries.

#### **B12.01: Prospect and Opportunity: cultural heritage, CAP and the Rural Development Regulation 2014–2020**

by **Vincent Holyoak** (*English Heritage, UK*)

Since the establishment of the Common Agricultural Policy (CAP) in 1957 the emphasis has changed from providing cheap and plentiful food to making European farming more environmentally sustainable and delivering other public goods. The current CAP has provided opportunities to conserve and manage rural cultural heritage across Europe, but its use has varied considerably across member states. Representations from the EAA and EAC have helped to ensure that the forthcoming CAP has more recognition for cultural heritage than any of its predecessors. But given the patchy use across Europe of the existing provisions for managing heritage, and at a time when budgets are under pressure, and governments wish to minimise their own spend on rural development whilst maintaining payments to farmers, what are the prospects? With a draft CAP which highlights new issues to be addressed, such as climate change and a renewed emphasis upon existing objectives, key amongst which is encouraging economic growth, even the delivery of environmental public goods are likely to be viewed less favourably than those that contribute to the economy. What chance therefore does heritage stand against these other competing and often politically persuasive demands? This paper offers a rapid ‘threats and opportunities’ assessment of the likely scenarios that the CAP and the emerging Rural Development Regulation will present to archaeologists and other cultural heritage professionals across Europe.



#### **B12.02: Influencing the formulation and implementation of policies at European and international level**

by **Emmet Byrnes** (*Forest Service, Ireland*)

This short presentation is aimed at facilitating a wider discussion on the opportunities for cultural heritage organisations such as the EAA to influence the formulation and implementation of relevant policies and regulations at European or international level. It will be a reflective paper, based on the personal experiences of the presenter, in particular his involvement in national discussions and consultation processes on the CAP, especially the Rural Development Regulations and related national Rural Development Programmes, and more recently whilst seconded to a team working with European Institutions during the Irish Presidency of the Council of the European Union including as a member of a national delegation engaged in related international negotiations. It is hoped to provide some fresh and constructive, albeit individual, insights into the internal workings of the European Institutions, the role of member state representations, engagement by parties such as environmental NGOs, and the timeframes in which policy is proposed, formulated, implemented, and reviewed.

#### **B12.03: Common Agricultural Policy and archaeological heritage management in Slovakia – brief report on the situation**

by **Noémi Požinová** (*Constantine the Philosopher University, Slovak Republic*), **Ján Beljak** (*Archaeological Institute of the Slovak Academy of Sciences, Slovak Republic*)

The report will focus on the situation in Slovakia. The paper will present the practices of land and heritage management and its problems in Slovakia. We focus on implementation of the CAP framework at the national level and point out this facts that "don't" relate to archaeological heritage. We introduce also the Monuments Act and forthcoming changes in it with focus on those points that are indirectly based on the CAP regulation. On the other hand, we like to draw attention to the fact of unrelated agricultural and cultural sectors in Slovakia. We operate as archaeologists within the framework of the archaeological legislation and within the given state we form the basis for the protection of cultural heritage and archaeological material. However, it is often an unequal struggle between the development of rural land and archaeological heritage protection. There are ca. 10000 immovable national cultural monuments in Slovakia, about 400 of them have the status of archaeological monument. This paper will also examine the implications for archaeology and spatial planning of new legislation and agricultural policy in Slovakia. And finally we point out the possibilities of using changes in legislation and policy to improve the practice of archaeological heritage management.

#### **B12.04: "The CAP in England – recent achievements and lessons for the future"**

by **Amanda Chadburn** (*English Heritage, UK*)

This paper will set out and review the achievements of the CAP-related schemes and regulations in England. The current Environmental Stewardship scheme, which includes the protection of the historic environmental environment as a primary objective, will be reviewed with numerous examples and illustrations. How well have the Entry Level and Higher Level Schemes worked? How well has the Single Payment Scheme worked? The relationship of these schemes to English Heritage's Heritage at Risk programme will also be set out, along with their achievements in getting numerous Scheduled Monuments removed from the "At Risk" register. But looking to the future of CAP, with the likelihood of less money being available, how can we build on these successes? If less money is available, which parts of the historic environment are likely to suffer most? And which parts of the historic environment should we be prioritising in the future schemes? There are no easy answers here, but it is hoped that this paper will provoke discussion and suggestions for current and future negotiations.

#### **B12.05: The CAP in Germany – a survey of federal diversity**

by **Michael Strobel** (*Landesamt für Archäologie, Germany*), **Thomas Westphalen** (*Landesamt für Archäologie, Germany*)

In 2008 the Verband der Landesarchäologen in der Bundesrepublik Deutschland e.V. enabled the authors to constitute a commission of forestry and agriculture. All members are strongly committed to the archaeological heritage management in rural landscapes. The German federal system requires an extremely high level of coordination and co-operation between the different federal structures.

For about half a year the federal German ministries started to adapt their agri-environment-schemes to the new European CAP-guidelines. The paper reports the member's activities in networking and influencing this process in order to place a better protection of archaeological monuments in rural landscapes.

## Session B13

### New digital developments in heritage management and research

Thursday, 5 September 2013, 08:30–16:00

Room: UP 108 (Building 2, ground floor)

**Organisers:** Julian Richards (Archaeology Data Service, UK), Franco Niccolucci (PIN, Italy) and Elizabeth Jerem (Archaeological Institute of the Hungarian Academy of Sciences, Hungary)

European archaeologists are developing a number of new digital tools for heritage management and research, and dissemination. This session will examine issues of shared concern – including freedom of information, the implications of open and linked data, the need for digital archives and research infrastructures, European data standards and interoperability, and the development of new forms of information dissemination, including open access online publications, virtual archaeology, social media, and serious games for cultural heritage. Our goal is to show how cutting edge digital technologies extended the number of tools and actions which archaeologists should use in managing, researching and presenting sites, monuments and artifacts.

#### **B13.01: Reconstructing Conimbriga: collaborative work between archaeology, architecture and computer graphics**

by Virgílio Hipólito-Correia (*Museu Monográfico de Conimbriga, Portugal*), Alexandrino Gonçalves (*Instituto Politécnico de Leiria, Portugal*), Nuno Rodrigues (*Instituto Politécnico de Leiria, Portugal*), César Ferreira (*Instituto Politécnico de Leiria, Portugal*)

Conimbriga is a Roman site open to the public since 1930, that plays a prominent role in Portuguese archaeological heritage and is visited by c. 100 000 visitors a year, with increasing information demands. Archaeologists and architects have endeavoured over the years to produce credible reconstitutions of the more remarkable buildings, but this is hindered by the fragmentary nature of remains and other questions (less than 20% of the town is excavated). Recently, computer graphics has been added to the equation as means of: i) facilitating the production and dissemination of the reconstructions; ii) introducing an element of perception and credibility assessment to the process; iii) ultimately, producing a complete interactive model of the town. Our goal is to develop a way to embed a 3D live model viewer that use standard technologies such as HTML5 and WebGL, which allows for a browser to take advantage of the GPU capabilities through the means of JavaScript. All of the 3D models were produced with Blender, an open-source software. This combination technologies furthers the creation of models which may be produced with open source software and easily widespread on the Internet, presenting realistic models with good rendering performance.

#### **B13.02: Digital technologies in presentation of archaeology in National Museum in Prague**

by Veronika Mikešová (*National Museum, Czech Republic*), Marie Opatrná (*National Museum, Czech Republic*)

The influence of digital technologies is still rising and archaeology cannot disregard it. Technological innovations are invaluable tools especially in the presentation and popularisation of archaeology, which enable us to attract members of society across the age categories. We can address the general public by means of the internet and moreover, archaeologically educate the parts of society that would never learned about archaeology by themselves.

Internet accessibility and attractivity of multimedia is one of the main factors that the Czech project 'Archaeology within Reach' relies on. The aim of this project is the presentation of archaeological heritage and its use in education. One of many ways which appeals to the public, is the website of the same name and connected social network Facebook. The project tests the means for the popularisation of archaeology through modern technologies that have not been used in the Czech Republic until now. The usage of our website and social network seems to be highly effective and it will be extended to more areas, for instance, digital archives and e-learning. Our experiences with using digital technologies in the popularisation and presentation of archaeology are not regionally limited and can be applied in other countries.

#### **B13.03: The Virtual Archaeology project in Berlin – extending the digital toolbox with interactive virtual environments generated in game-engines**

by Arian Goren (*Freie Universität Berlin, Germany*)

Utilizing groundbreaking tools to open up new perspectives for researching archaeological questions and experimenting with new methods of site reconstruction is a fast growing focus in many works today. The amount of recorded data expands continuously. However, increasing precision correspondingly resolves in difficulties in bringing together data from various formats into unifying, comprehensive working environments.

The “Virtual Archaeology” project, launched in mid-2010 as a Berlin based interdisciplinary working group set as its goal to compile a standardized workflow for combining data from various origins, in differing scales and different resolutions into a single platform. Methodological considerations such as cross-platform compatibility, efficient processing of large datasets and easy access to an underlying database were approached. Standardized procedures were articulated and solutions to interface-contradictions were realized. The principle goal aims to achieve true-to-detail, realistic 3D visualizations in a fully interactive virtual environment generated by game engines.

Thus far successful results include a highly detailed, true-scale digital model of the architecture and decorative inscribed relief-blocks of the temple of the storm-god in Aleppo, Syria and a 3D multi-scaled surface model of the larger research area.

#### **B13.04: From Past Image to Present Dataset: New ways of recovering 2D and 3D data from historic aerial reconnaissance imagery**

by **Christopher Sevara** (University of Vienna, Austria)

This presentation examines new ways of extracting two and three-dimensional archaeologically relevant information from historic aerial and satellite vertical frame camera imagery through the use of computer vision based applications. In areas where little or no systematic aerial photography campaigns have been carried out, war-era aerial images and high resolution satellite reconnaissance imagery from government spy programs can provide the only coherent visual historical record of the landscape. However, when such datasets are available, they are often difficult to access and process without considerable expert knowledge. One solution is to process historic datasets using cost-effective, semi-automated image-based modeling packages which include Structure from Motion and Multi-view Stereo algorithms. Using these processes on historic image sets can result in high quality, georeferenced orthomosaics and historic Digital Elevation Models (hDEMs), which can reveal past landscapes in 3D and offer valuable information about landscape change through time. As these approaches are highly automated they also make these tools more accessible to non-expert users. In addition to obviating some of the difficulties inherent in processing historic imagery, this approach also demonstrates that historic remote sensing images can be put to novel uses that far exceed their intended purposes.

#### **B13.05: Alternative views: Automated photogrammetry on lost heritage**

by **Andrew Wilson** (Bangor University, UK), **Jonathan Roberts** (Bangor University, UK), **Raimund Karl** (Bangor University, UK), **Bernard Tiddeman** (Aberystwyth University, UK)

The alternative views project aims to recreate the three-dimensionality of lost heritage assets by taking a case-study based approach to a sizeable image database which in parts dates back to the 1970s and even before. Alongside Gwynedd Archaeological Trust's photographic archive (c.500,000 photographs) we have access to Bangor University's archaeological slide collection (c.70,000 photographs). The work will focus on heritage photographs, taken, either during excavation and survey, or during University field trips; as such, the images were not taken for the purpose of creating a 3D picture. Images will then be examined visually to identify potential candidates for 3D photogrammetry rendering. Images of sites and monuments that have since been destroyed or significantly altered will be selected as a matter of priority, with a preference for images taken at the same time. This process, however, is further complicated by the fact that these archived images were developed over a long period, and have been created by different technologies. The project aims to investigate the possibility of combining these images into one rendering process, to successfully create a 3D model of lost heritage assets. Thus we aim to re-create 3D images of sites that cannot be digitised into 3D today.

#### **B13.06: Image-based 3D modeling, a revolution in archaeological excavation practice?**

by **Jeroen De Reu** (Ghent University, Belgium), **Wim De Clercq** (Ghent University, Belgium), **Pieter Laloo** (Ghent Archaeological Team bvba (GATE), Belgium), **Philippe De Smedt** (Ghent University, Belgium)

In this paper we examine image-based 3D modelling for the recording of archaeological excavations. Following a series of small-scale case studies (De Reu et al., 2013), the entire Boudelo-2 excavation was recorded in 3D.

Our results suggest that image-based 3D modelling can cause a(n) (r)evolution in archaeological excavation practice. The scientific value of the generated data is qualitatively higher than achievable with traditional recording techniques. The recording of the excavation can also proceed faster and more efficiently. The visual and 3D-character of the method provides important educational and presentational possibilities. Its limitations are offering new challenges to be overcome. Until now there is no possibility to immediately check the output of the recordings and at least a few

hours of processing time are required before the data can be evaluated. This also prevents storing (context)numberings, descriptions and interpretations immediately on the excavation recording and these can only be linked up to the recordings afterwards. The amount of data collected and generated is huge.

Nevertheless, the possibilities of the method greatly surpass its limitations. Proceeding from a 2D to a 3D recording of archaeological excavations is of paramount importance for increasing the value of the excavated and digitally preserved heritage.

### **B13.07: Updating the old lists of historical monuments in Transylvania. Archaeological heritage, digital tools, and GIS. New approaches.**

by **Florin Fodorean** (Babes-Bolyai University Cluj-Napoca, Romania), **Ioan Fodorean** (Babes-Bolyai University Cluj-Napoca, Romania), **Iuliu Vescan** (Babes-Bolyai University Cluj-Napoca, Romania), **Ștefan Bilașo** (The Romanian Academy, Romania)

Romanian archaeologists have made many efforts to understand the topography of Roman Dacia. They used classical methods, i.e. fieldwalking and excavations, in a period of 'romantic archeology', when there were no economic pressures, no 'deadlines', and no preventive archaeology. During the 1950's a project started in Romania focusing on the creation of the National Archaeological Repertory. Shortly after, due to a lack of cooperation between specialists, and a lack of sufficient involvement of archaeologists, the project was partially abandoned. Subsequently, the Ministry of Culture decided to create the so-called Lists of Historical Monuments for each region/county in Romania. Unfortunately, these lists contained many errors, including nonexistent sites or useless topographic information. The spatial information, in many cases, is formulated like this: "in that part of the village", "within the territory of the settlement X" or "South, North, East or West of this point/road/terrace/river etc." We aim to correct all the errors included in these lists, to combine archaeological data with digital software and to provide new insights on this topic, in order to create accurate maps, indicating the precise location of each site.

### **B13.08: Managing the future: new frontiers in Italian Open Archaeology**

by **Francesca Anichini** (University of Pisa, Italy), **Gabriele Gattiglia** (University of Pisa, Italy), **Fabio Fabiani** (University of Pisa, Italy), **Maria Letizia Gualandi** (University of Pisa, Italy), **Nevio Dubbini** (University of Pisa, Italy)

The MAPPA – Methodologies Applied to the Predictivity of Archaeological Potential – project (University of Pisa) is a research project aimed at the creation of a replicable predictive model of a map of archaeological potential in an urban area. The starting point has been a well-organized data archive, so the research group focused on developing a webGIS and the Open Data application. The webGIS (MAPPAGis) offers the archaeological information layer, the building archaeology layers, the historical mapping layer and the geomorphological layer. The optimization of MAPPAGis is intrinsically linked to the MOD (MAPPA Open Data), the first Italian archaeological open data archive, that collects datasets of archaeological raw data and preliminary reports. Through the use of spatial and geostatistical analysis, the cooperation with geologists to analyze the ancient surrounding environment and with mathematicians to elaborate a specific algorithm, we realized a predictive mathematical model. Using the same criteria as those for assigning importance to web pages by search engines, we identified the relations that exist among finds, both in spatial and in functional terms. All these open products have a strong impact on archaeological heritage protection, territorial planning and historical knowledge.

### **B13.09: Integrating archaeological datasets: a challenge for archaeologists and computer scientists**

by **Franco Niccolucci** (PIN, Italy), **Julian Richards** (University of York, UK)

The EU-funded project ARIADNE, the European integrated research infrastructure for archaeological datasets, aims at overcoming the current fragmentation of existing archaeological data repositories. The current difficulty of accessing data in an integrated way partially depends on technology. The project will survey and discuss research issues and needs of different sub-domains, from aerial photography to dendrochronology, and will analyse the fit of current technological solutions. A preliminary survey showed that there is a risk of "data overflow" and a risk of misfit between the needs of archaeological researchers and the available technological offerings in terms of standards and data organization. Some excellent solutions, so far implemented partially or only in a limited region, need to be tested and extended for wider applicability. Project research activities concern informatics, to develop the necessary tools for integration, but also the foundations of archaeological documentation. The project development will build on the achievements of the work done by the researchers involved in the project, and in general on cutting-edge research in cultural ontologies, natural language processing and innovative digital approaches to the archaeological discourse. It is our conviction that this will be highly beneficial to the research community and to the audience of EAA2013.

**B13.10: Data: Making it digital doesn't automatically make it clear**

by **Harrison Eiteljorg** (*Center for the Study of Architecture, USA*), **Andrea Vianello** (*Independent researcher, UK*)

The utility of aggregating archaeological data rests on the assumption that large quantities of data can be used to elucidate problems that are otherwise difficult to solve. In that sense, aggregation of archaeological data reflects modern trends toward constructing large data sets and databases to bring computing power to bear upon problems of interest. This process presupposes that all the data have been gathered and recorded using appropriate standards so that all the data can be used together effectively.

Archaeological data gathered by one project are presumably useful because the same standards have applied to all the data gathering and recording processes. When data from multiple projects are combined, however, the likelihood of being able to work with such data sets is very low. This problem encompasses both traditional archaeology and scientific archaeology.

Useful data aggregation depends on terminological and data-recording issues that are necessary predecessors to the effective use of aggregated digital data. Indeed, we would argue strenuously that terminology and data recording systems must be brought into harmony before data aggregation can be useful and that it is too early in the development of digital resources to concern ourselves with technological issues.

**B13.11: How many archaeologists does it take to make a recording system? What are the implications of using different recording methodologies and terminologies for the data that we generate? What are the possible implications for semantically linked and open data?**

by **Keith May** (*English Heritage, UK*)

In recent years advances have been made in the research uses of Semantic Web Technologies (SWT) for archaeological data presentation, search and reporting. This has included technologies for cross-searching enabled by using the CIDOC CRM ontology with archaeological extensions such as the CRM-EH.

This work to date has focused on typical systems for archaeological recording in the UK, based upon the Single Context Recording method introduced by the Museum of London in the early 1990s. At a conceptual level the archaeological data recorded using this method are inter-related by identifying and documenting single units of stratigraphic material.

Underlying the work of mapping 'single context' data from different archaeological database systems to a common ontology there may be even more fundamental questions about how to share data derived using different archaeological recording methodologies.

This paper will examine issues raised by modelling the single context recording system at English Heritage and mapping it to other 'single context' systems. It will also consider conceptual commonalities that may exist in different archaeological recording methodologies, whether 'single context recording' or otherwise, and consider challenges raised by trying to integrate, or simply search across, data from different archaeological recording systems.

**B13.12: You say tomato, I say pomodoro...how archaeological thesauri are coming together across the UK and Europe to allow greater interoperability of data, within new and existing infrastructures**

by **Holly Wright** (*University of York, UK*), **Doug Tudhope** (*University of Glamorgan, UK*), **Ceri Binding** (*University of Glamorgan, UK*)

Archaeology has a rich tradition of using expressive terminologies to understand our areas of study, but the rise of computing has created a fundamental tension within how we name resources, and define their relationships. Controlled vocabularies and hierarchies return more reliable search results, the ability to share data across different projects, and potentially allow new and better answers to research questions. Equally, their use can result in loss of information and understanding, if they cannot express the regional, subject-based or language-based complexity held within the data. How to navigate this tension has been the subject of much debate.

New technologies and infrastructures, including Linked Data, may now be able to help address this difficult problem; to use thesauri for better search results and sharing of data, while still maintaining the diversity of terminology used across archaeology. This paper will explore the experiences at the Archaeology Data Service in the UK, where thesaurus development is being explored at the individual archive level, alongside bringing together the national thesauri for England, Scotland and Wales as part of the AHRC funded SENESCHAL project, and finally, international thesauri from across Europe, as part of the EU Infrastructures funded ARIADNE project.

### **B13.13: Identity criteria and fundamental concepts in archaeology – the case of the “archaeological site”**

by **Sorin Hermon** (*The Cyprus Institute, Cyprus*), **Martin Doerr** (*Foundation for research and technology – Hellas, Greece*), **Franco Niccolucci** (*University of Florence, Italy*)

Archaeology is still a young science and as such, lacks an agreed work methodology, definition of basic terms or generic framework for defining such terms. The last thirty years of discussion regarding identification and formal description of basic terms in archaeology yielded with generic ones. In the last decade archaeology witnessed the raise of two major factors that highlighted this problematic and urged the need for a solution: the large scale adoption of informatics and the use of computers in every aspect of archaeological research, and the intellectual need for more transparency for data provenance and formalization of the archaeological reasoning process. The paper will present a solution to the above challenges, by discussing a basic and fundamental terms in archaeology, namely the “archaeological site”. Consequently, its identity criteria will be identified and explicitly presented through a formal representation within the CIDOC conceptual reference model. Such a representation will offer a solution to the need for a formal definition of the term, which will not impose any particular “standard”, nor will propose a “one-size-fits-all” definition, but rather will enable a “mapping” of any explicit description of its defining criteria, in the same time evaluating their consistency, reliability and robustness.

### **B13.14: PATHS: Tools for exploring digital cultural heritage spaces**

by **Kate Fernie** (*MDR Partners (Consulting) Ltd, UK*), **Jillian Griffiths** (*MDR Partners (Consulting) Ltd, UK*), **Mark Stevenson** (*University of Sheffield, UK*), **Paul Clough** (*University of Sheffield, UK*), **Eneko Agirre** (*Universidad del Pais Vasco, Spain*), **Aitor Soroa** (*Universidad del Pais Vasco, Spain*), **Stein Runar Bergeheim** (*Asplan Viak Internet, Norway*), **Mark Hall** (*University of Sheffield, UK*), **Konstantinos Chandrinos** (*i-sieve, Greece*)

Significant amounts of digital material relating to heritage management and research have become available over recent years with the rise of online publications, digital archives, research infrastructures and aggregators such as Europeana. These large collections present challenges to users in discovering what items are present. Standard search paradigms for item discovery have worked well for those who are highly familiar with the collection being searched but as collections increase in size more powerful exploration systems are required.

The PATHS project ([www.paths-project.eu](http://www.paths-project.eu)), funded by the European Commission’s FP7 programme, brings together partners to research and develop a system to provide users with an environment in which they can successfully explore large, unknown collections. The project is applying language technologies to analyse and enrich manually created collection metadata, which is then exploited in the collection discovery environment.

This paper will provide a guided tour of the PATH system and the tools developed to enable users to explore collections, collect items and form these into paths. Its goal is invite archaeologists to explore the prototype system and to evaluate the potential of the tools for implementation in research infrastructures and systems designed to present sites, monuments and artefacts to the broad public.

### **B13.15: The economics of archaeological research infrastructures**

by **Julian Richards** (*University of York, UK*), **Catherine Hardman** (*University of York, UK*)

There is a current tidal wave of pressure towards Open Data throughout Europe. The Archaeology Data Service in the UK has been archiving digital data for over 15 years and has developed a charging model which covers the costs of digital preservation and dissemination. This makes digital archiving a sustainable activity, funded by a one-off charge at the point of deposit, whilst ensuring it remains free at the point of use. This paper will discuss the results of two recent projects funded by JISC which have helped us understand the costs and value of digital preservation. The SWORD-ARM project has allowed ADS to develop an online costing tool and a semi-automated system for digital archive file upload and deposit, known as ADS-easy. A second project, on the value of ADS, has allowed us to work with Charles Beagrie.com and John Houghton, of the Centre for Strategic Economic Studies to study the long term economic value of archiving digital data. Preliminary results suggest that for every £1 invested in ADS may, over 30 years, yield a return of up to £8.30. Both projects will complete in summer 2013, and the EAA will be the first presentation of their final results.

### **B13.16: A First Attempt at Describing, Reusing and Disseminating Archaeological Methodological Knowledge**

by **Cesar Gonzalez-Perez** (*Incipit, CSIC, Spain*), **Patricia Martín-Rodilla** (*Incipit, CSIC, Spain*)

Methodologies provide guidance on what steps to take, what products to use or generate, and what teams or skill sets to involve, and when to do all this. In archaeology, knowledge about what methodologies work and which do not is described in a vague and ambiguous fashion, if at all. This makes methodological knowledge difficult to disseminate and reuse amongst archaeologists, and its repeated successful application, especially in complex, distributed teams, very difficult to attain.

For this paper, a small corpus of methodological knowledge was extracted by interviewing 16 archaeologists, which included researchers, industry practitioners, academics, government heritage managers and museum staff. The methodological knowledge was formalised according to a variant of ISO/IEC 24744, and a method component repository was constructed. Detailed observations are reported with regard to what kinds of information were difficult or impossible to capture, and which nuances had to be left out.

Also, and as a subsequent step, specific methodologies were re-created from the method component repository with the assistance of experts that had not participated in the knowledge extraction process, in order to verify to what extent the captured knowledge was useful as a reuse and dissemination medium. Our conclusions are mixed in this regard.

## Session B14

### The roles and benefits of professional associations in Europe and beyond

Thursday, 5 September 2013, 16:30–18:30

Room: EP 206 (Building 1, 1st floor)

**Organisers:** **Gerry Wait** (Nexus Heritage, UK), **Kenneth Aitchison** (York Archaeological Trust, UK) and **Vesna Pintaric** (University of Primorska, Slovenia)

Archaeological bodies and organisations exist in a variety of types all over Europe – and beyond. In some countries there are ‘professional associations’ – for archaeologists and other disciplines. Such associations have a particular role in self-regulation, and provide a range of benefits to the wider public and to their members. It is commonly argued that the need for professional associations is not universal, and that they are only needed in certain cultural, legislative and judicial traditions. But is that true? This session will focus on the special characteristics of professional associations – where professional members voluntarily subscribe to an ethical code, comply with a requirement to demonstrate competence, are prepared to be investigated (and punished) by their colleagues for transgressions, and agree to place the interests of the public and clients above their own. It will explore whether this sort of professional self-discipline is only useful where regulation of archaeology by the state is limited or absent, or whether the principles might have wider application to a more prominent profession producing more valuable benefits to the general public in whose name most archaeologists ultimately work.

#### **B14.01: Oranges are not the only fruit: choice, competition and collaboration between professional associations**

by **Kenneth Aitchison** (*Landward Research Ltd, UK*)

In the United Kingdom there are a range of professional institutes that professional archaeologists can join (not least the Institute for Archaeologists, the Museums Association and Icon: the Institute of Conservation) alongside special interest groups that try to act as though they have professional association status. This paper will explore the relative importance of these organisations within their wider sectors, how they overlap and have interacted in the past, how they might productively collaborate in the future and how this can support the professionalisation of archaeologists across Europe.

#### **B14.02: Parsing Ethics: Why the SAA needs RPA**

by **Jeffrey Altschul** (*Statistical Research, Inc./SRI Foundation, USA*), **Lynne Sebastian** (*SRI Foundation, USA*), **Tobi Brimsek** (*Society for American Archaeology, USA*)

In the wake of the passage of laws and regulations affecting archaeological resources in the 1960s, many American archaeologists worried that the lack of an enforceable ethical code and research standards would lead to a decline in the quality of archaeological research and a disillusioned public. In 1976, the Society of Professional Archaeologists (SOPA) was established to remedy this situation. SOPA had strict membership criteria, coupled with a grievance procedure designed to adjudicate allegations of noncompliance with a code of ethics and standards of research performance. SOPA was never widely embraced by American archaeologists.

The Society for American Archaeology (SAA) is one of the largest and oldest archaeological organizations in the Americas. In the 1990s the SAA spent years revising its ethical principles, culminating in their formal adoption in 1996. These principles, however, are not enforceable. In 1998, the SAA led the effort to transform SOPA into the Register of Professional Archaeologists (RPA). Although more successful at attracting Registrants than SOPA was at soliciting members, the Register is still far from being universally accepted. This paper examines the consequences of separating ethical principles from their enforcement.

#### **B14.03: The Hybrid Nature of the American Cultural Resources Association: Professional Organization or Trade Association?**

by **Teresita Majewski** (*Statistical Research, Inc., USA*), **Donn Grenda** (*Statistical Research, Inc., USA*), **Michael Heilen** (*Statistical Research, Inc., USA*)

Cultural Heritage Management (CHM) began to develop as a profession and as an industry in the United States in the 1960s when key legislation was passed at the federal level. Practitioners realized that already established professional organizations, with more scholarly roots, could not fully serve the complex needs of a profession/industry that focused on both heritage advocacy and business. The American Cultural Resources Association (ACRA) formed in 1995 and



today has over 150 firms as members. While difficult to define precisely, ACRA is essentially a hybrid between a professional organization and a trade association. ACRA's goal is to be *the* voice of the industry and to provide a united front in the face of legislative threats to the resources and to the legislative framework that protects them. Using the notion of "disciplinarity," we review and evaluate ACRA's efforts to support and promote the CHM industry at a national level. ACRA's activities include educating government officials, lobbying Congress in support of preservation and the industry, partnering with a heritage preservation legal firm, holding conferences and workshops, liaising with related organizations that have common or overlapping purposes, collecting metrics on the industry and its practitioners, and establishing and encouraging best practices.

#### **B14.04: Do Spanish archaeologists ever dream of a collective?**

by [Jaime Almansa Sánchez](#) (*JAS Arqueología SLU, Spain*)

I always had the feeling that corporatism was essential for the professional sector. Even while I was finishing my degree I started to get involved with the main professional association in Madrid and, after a couple of years, I helped to found a new one. What happened? Facing the precarious situation of archaeology professionals during the boom of the mid 2000s, there was still not a body to support the real needs of the profession. Since that time, the 'problem' of the collective, or its absence, has been a central point of concern to me and to others.

This paper will analyze the latest advances in, and reactions to, professional associations in Spain, with a special focus on the latest events taking place in Madrid.

#### **B14.05: FaF – A playground and a platform for archaeologists. The difficulty of setting an agenda: How to juggle between giving space, have fun and be dead serious.**

by [Jette Rostock](#) (*Foreningen af Fagarkæologer, Denmark*)

Although we have a national tradition in Denmark for finding archaeology interesting, this does not mean that the discipline of archaeology has clout, when it comes to making political decisions about the management of, and research in, our material past. The experts (the archaeologists) are scattered at different institutions (many on a loose basis), which makes it difficult to formulate joint requirements.

FaF – Foreningen af Fagarkæologer (The association of archaeologists) – is a member organisation for archaeologist from all branches of archaeology. The association aims at creating a social and professional society for archaeologists, and to provide a platform and a framework for discussions of academic as well as political significance for our profession. It is our mission to develop the discipline of archaeology and to strengthen the role of archaeology in the contemporary society.

This paper will discuss the challenges of creating a professional and collegial network, and the opportunities for future influence on the management of our discipline.

#### **B14.06: Enigmas and Variations: Thoughts on the Function of Archaeological Associations in Europe**

by [Gerry Wait](#) (*Nexus Heritage, UK*)

There are a wide variety of organisations that exist to serve an equally wide variety of functions for archaeologists in Europe – including of course the EAA! As one of the goals of this session is to let country-experts explain simply what happens in their own countries, this presentation will take a different perspective. I will review what I have been able to learn about the *raison d'être* for a selection of the larger/more active/better known organisations in Europe from the perspective of the functions they serve. From this, it is possible to identify the gaps in the functions for which there is perceived to be a local need. The discussion this provokes will be used to identify the opportunities for archaeologists to act collectively to support the profession of archaeology, and the provision of a variety of benefits to the European public.

## C: Theory and paradigms in Archaeology

### Session C01

#### An Archaeologist at the Centre of Europe: A Symposium in Honour of Evžen Neustupný

**Saturday, 7 September 2013, 08:30–13:00**

**Room:** EP 110 (Building 1, ground floor)

**Organisers:** **John Bintliff** (Leiden University, The Netherlands) and **Kristian Kristiansen** (University of Gothenburg, Sweden)

This session will celebrate the many important contributions made by Professor Neustupný in archaeological method and theory in his long and eminent career, through contributions by colleagues, friends and admirers which will link up to the major topics he has discussed and often pioneered in European Archaeology.

##### **C01.01: Scientia, society, and polydactyl knowledge: Archaeology as a creative science**

by ***Timothy Darvill*** (*Bournemouth University, UK*)

The epistemic basis of knowledge creation has long been a subject of interest in archaeology and one that Evžen Neustupný has contributed to through his award-winning essay 'Whither archaeology?' and his book *Archaeological Method* with their central concern for theory, methods, and the validation of knowledge. Tensions between the epistemologies of east and west, and between sciences and the humanities, have been well to the fore in much of this and remain at the core of many wider debates within archaeology. But there is a bigger picture, and one that also has importance in theoretical, practical, and professional terms. Taking one step back from the epistemology of knowledge creation, this paper considers a broader ontology of knowledge, providing an excursion into the metaphysical nature of archaeological knowledge, its constitution, and its application in contemporary society. It is suggested that archaeology is essentially a creative science, and that on an international compass embraces many different but connected kinds of knowledge. Like the fingers on a hand, the separate digits of polydactyl knowledge are of equal value and interest albeit prioritized in different ways by different societies and subcultures.

##### **C01.02: How we have come to do archaeology the way(s) we do: a meta-critique of current archaeological discursive formation**

by ***Koji Mizoquchi*** (*Kyushu University, Japan*)

If we were to define archaeology as constituting a communication system, we would have to perceive it to be self-defining, self-reproducing, and reducing the complexity which the operation of the other communication systems constituting the world generates. It means that as the world gets transformed so does archaeology, albeit on its own terms, or by drawing upon its own structuring principles. However, these very principles themselves are also constituted, and constantly transformed, through the reduction by archaeology as a communication system of the complexity of the world. This 'double reflexivity', so to speak, constitutes what archaeology can say about itself and the world, both past and present. Drawing upon the social systems theory of the late German sociologist Nikulas Luhmann, this paper illustrates how we have come to do archeology the way(s) we do.

##### **C01.03: A congratulation to E.N.**

by ***Jan Bouzek*** (*Charles University, Czech Republic*)

We started together in a project at Most in the fifties and went along having during our life-span often different approaches and views, but now in our ripe age I should underline that his ideas were always inspiring to me. I took over much on the interpretation of European Eneolithic, including his fruitful study on patriarchal societies, on some models and calculations, even if independent of literary sources and mythology, which for me weighed more. I always had some resistance against New Archaeology, Processualism and Postprocessualism and attended with some pleasure the session on the Death of archaeological theory at Cracow, but the last ripened definitions of new paradigms by our jubilee as expressed in his last years brought us again much closer. All best wishes!

#### **C01.04: Beyond Theoretical Archaeology: A Manifesto for Reconstructing Interpretation in Archaeology**

by **John Bintliff** (*Leiden University, The Netherlands*)

In an earlier volume celebrating Evžen Neustupný's inspirational work – *Whither Archaeology* (1995), I criticized the narrow horizons within which successive movements in Western European Archaeological Theory have imprisoned academics and students. More recently, with Mark Pearce (2011), I have characterized the evolution of mainstream Theoretical Archaeology in Western Europe since the 1960's as a steady progression from any claim to a neutral, open scientific endeavour, towards relentlessly pure ideology. This contribution will set out how we could reform the process of interpretation in Archaeology, and liberate professional teachers, fieldworkers and students from the current absence of critical, reflective and diverse approaches to reconstructing the Past.

#### **C01.05: Archaeology and Politics in the 21st Century: Still Faustian, But Not Much of a Bargain**

by **Bettina Arnold** (*University of Wisconsin-Milwaukee, USA*)

There is a paradigm shift occurring in the symbiotic relationship that has existed between archaeology and politics since the 19<sup>th</sup> century, when the rising tide of nationalism and the development of archaeology as a profession in Europe combined in a mutually enabling synergy. In the twenty-first century archaeology still has its uses as political capital but the primary consumer is no longer the nation state, which is divesting itself with disturbing speed of responsibility for cultural patrimony by an increasing trend of privatization of archaeological sites, but a new kind of identity politics made up of special interest groups, both supra-national (such as the EU) and intra-national (such as indigenous groups). As financial support of archaeological research by governments continues to shrink, cooption of archaeological data by special interest groups is growing and archaeologists appear to be unaware of the shifting political ground and its implications for the future of their profession.

#### **C01.06: "Theor-ethical" issues in Archaeology of the First World War**

by **Franco Nicolis** (*Ufficio beni archeologici, Italy*)

In recent years the archaeology of contemporary armed conflicts has had a dynamic evolution, but it does not seem to have succeeded in being accepted as an autonomous discipline among the vast array of Archaeologies. The archaeology of contemporary armed conflicts itself is made up of many Archaeologies (Archaeology of Identity, the Archaeology of Memory, Archaeology of Grandpa, Archaeology of us).

In this paper I will try to define the position of the archaeology of contemporary armed conflicts within the theoretical debate, its relationship with other archaeologies, with History and other disciplines with an interest in the subject, but first of all with the ethical problems relating especially to the recovery of human remains, when personal histories and private memory break through into the scientific debate.

A reflection on these points is of fundamental importance today when Archaeology has to take a global diachronic approach, so that it can assume a pivotal role both in relation to the recognition of its disciplinary status and to the negotiation of its position in the face of competition from other disciplines which are traditionally better equipped to tackle these scientific topics, and has to give itself a relevant social role which is increasingly requested by our society.

#### **C01.07: From bioarchaeology to biohumanities. Bio in the history of archaeological thought**

by **Arkadiusz Marciniak** (*University of Poznań, Poland*)

This paper aims to discuss the major facets of a complex history of bio inspirations in the history of archaeological thought. It will start by scrutinizing the emergence of bioarchaeology. In particular, different theoretical underpinnings of bioarchaeological studies will be presented as they laid foundations for the emergence of distinct theoretical schools across continental Europe. Their role in defining the scope of zooarchaeology and paleobotany will be carefully assessed. The paper will further discuss major recent developments in biohumanities and biopolitics and their potential impact upon archaeological thought as they challenge the modernist foundations of the biological framework in archaeology. An attempt will be presented to ontologize prehistoric animality within a theoretical context, and provide an explicit rejection of the Linnaean scheme.

#### **C01.08: Creation and Knowledge at Százhalombatta, Hungary**

by Joanna Sofaer (*University of Southampton, UK*)

Evžen Neustupný's recent work has focused on understanding the relationship between people and artefacts. He recently said "... it is important to realize that the historical task of man is to *create* (create artefacts, society and symbols)..." (Neustupný 2012). In this paper I want to reflect on the act of creation and its relationship to knowledge. My case study focuses on Middle Bronze Age ceramics from the Bronze Age tell of Százhalombatta, Hungary.

#### **C01.09: Ceremonial beer feasting, social relations and collective identity of early European farmers**

by Jan Turek (*University of Hradec Králové, Czech Republic*)

Festivals connected to drinking of alcoholic beverages entered the social life of Europeans in the Neolithic period as a new cultural element and remained in our social behaviour till the present day. The ceremonial way of drinking is well documented by specialised drinking vessels accompanying some burials and appearing as votive offerings in hoard depositions. Yet the direct evidence is scarce. The increased granary production during the Neolithic Period, namely that of barley, offered opportunity for, more or less, common brewing of beer that also had certain economic effects. Alcoholic feasts probably played an important role in a variety of social events and ceremonies. Such feasts reinforced the social bonds within a community and its collective identity and maintained communications in a time of an increasing density of social relations. Since the beginning of agriculture in Europe and the Middle East the consumption of alcoholic beverages became an important phenomenon in human culture. The ancient Europeans became used to alcohol drinking on both the physical and social level. Since then, and especially from the Copper Age onwards, consumption of alcohol became an important social activity structuring the social life of farming communities, maintaining social interaction and emphasizing the collective identity of early European farmers.

#### **C01.10: Prehistoric Mind in Context: on the possible roots of Ancient Egyptian civilisation**

by Miroslav Bárta (*Charles University in Prague, Czech Republic*)

It has been long supposed that some of the manifold roots of ancient Egyptian civilisation might be connected with the climatic degradation of the Western Desert, which led to the last wave of intensive sedentarisation in the Nile valley (Middle and Upper Egypt and the Sudan) and to the emergence of ancient Egyptian civilisation. Iconographic analysis of rock-art motifs in the area of the southwestern Gilf Kebir in Egypt's Western Desert provides indications for the conclusion that several concepts traditionally connected with ancient Egypt and its civilisation thriving in the Nile valley were possibly formulated much earlier and at a location other than the Nile valley itself. The sites of the Cave of Beasts (Wadi Sura II) and the Cave of Swimmers (Wadi Sura I) indicate that the local prehistoric populations of hunters and gatherers probably formulated some outlines that later became key concepts of ancient Egyptian world definition as early as during the sixth millennium BC.

#### **C01.11: Structures, events and categories of settlement discard**

by Martin Kuna (*Institute of Archaeology ASCR, Prague, v.v.i., Czech Republic*)

In 1972, M. B. Schiffer defined elementary categories of the archaeological record from the point of view of past human behaviour and the processes of archaeological context formation. These included the categories of primary and secondary refuse. Quite soon, however, it became clear that these categories do not apply to most prehistoric and Early Medieval settlement contexts in Central Europe. These contexts usually consist of just the lower parts of settlement pits without any traces of the original activity surfaces (hence, primary refuse can hardly be expected) and with rare instances of deliberate dumping (secondary refuse). In this paper, the concepts of "tertiary refuse" and "internal and external residue" are introduced as categories explaining the manner in which these settlement assemblages could have been formed. These concepts are presented here within a theoretical framework inspired by Evžen Neustupný, with particular attention being paid to the concepts of "structure" and "event" in archaeology. It is believed that considering depositional "events" in terms of behavioural categories is one of the general prerequisites for the correct identification and definition of "structures" such as chronological phases or other types of patterns within the archaeological record.

## Session C02

### Archaeology of religion: methodological issues

Thursday, 5 September 2013, 08:30–16:00

Room: UU 108 (Building 2, ground floor)

**Organisers:** **Tonno Jonuks** (Estonian Literary Museum, Estonia) and **Ester Oras** (University of Cambridge, UK)

Studies of ritual and religion are by no means a foreign country or pristine study area for archaeologists. Several projects, papers and talks discuss the questions of past religions varying from theoretical and terminological issues to chronology-specific or regional problems. Although in many terms archaeology of religion and ritual is constraint in spatial and temporal terms there are numerous topics that diminish those borders. One of such themes is methodology.

We are calling papers to discuss the current traditions of both theory and method in the archaeology of religion and ritual: what are the methodologies in and from different social and natural sciences that can be used for studying religion-related archaeological sites and objects? Which of them have been most fruitful, dismissed or gained far too little attention? What sources can be used for studying past religions? How can we combine different sources and approaches that come from literary, oral or archaeological background? What scientific methods have been and can be used for studying religious and ritual sites and objects? Could scientific approaches draw our attention to new and otherwise dismissed problems and interpretations? These questions are expected to cover different case studies of all religion and ritual related archaeological sites, landscapes and artefacts.

#### **C02.01: What can material culture of humans and chimpanzees tell us about religion? A Study in cognitive archaeology and cognitive science of religion**

by **Tomáš Glomb** (*Masaryk University, Faculty of Arts, Czech Republic*)

Cognitive archaeology is a relatively recently established scientific discipline. It focuses on the study of the development of mental capacities as inferred from material remains. Cognitive archaeology and cognitive science of religion presume the unity of human mental capacities since the prevalence of the anatomically modern human. Both cognitive archaeology and cognitive science of religion propose that religion is very closely connected with those capacities. Considering the biological evolution of species, this study will try to examine this proposal by analyzing the material culture of anatomically modern humans, especially from the Upper Palaeolithic, and chimpanzees. The comparison of the material and behavioral differences between humans and chimpanzees can tell us much about the cognitive capacities of anatomically modern humans and their connection to religion. In other words, through investigation into the role of specific aspects of the human mind the study will attempt to demonstrate what capacities are crucial for the formation of religions and why they possibly evolved.

#### **C02.02: Scientific Methods in the Research of the Beginning of Religion-Evolutionary Psychology and Archaeology**

by **Agnes Gresz** (*University of Pecs, Hungary*)

In the research of religion as a phenomenon, it is really important to use various disciplines. However, for the research on the beginning of religion and religious behavior, the investigation from various aspects is even more crucial. The archaeology can help to find material evidence of the religious behavior, although these findings can exhibit just one aspect of religion. This is not just a simple product of the development of the human civilization. The fact that the human being, the *Homo sapiens*, is able to improve his world with such an aspect is bounded to biological conditions. Religion, the transcendent as a phenomenon recovers a lot of elements, therefore the presence and the development of that shows the development of the human mind. In conclusion, it is possible to reconstruct the religious behavior of the Palaeolithic humans with the help of the evolutionary biology and the archaeological finds.

#### **C02.03: Seeking ideology of death in burial practices in the Middle Neolithic of Western Europe**

by **Florence Alliése** (*Université de Paris 1 Panthéon-Sorbonne, France*), **Philippe Chambon** (*CNRS, France*)

If it seems utopic to talk about archaeology of religion for the Neolithic, burial practices allow us to see parts of the ideology of a population and shed light on beliefs about death. It is these beliefs that dictate how the society of the living is reflected in the world of the dead. Mortuary practices are the filter that should be questioned to understand how men conceived death.

The ideology of death will be discussed through two case studies related to the Middle Neolithic in Western Europe where ostentation appears strongly in burial practices: the *Sepulcres de fossa* (Catalonia, Spain) and the Cerny (Parisian Basin, France).

The burials of the *Sepulcres de fossa* culture are characterized by a complex typology and abundant grave goods. The recurrent association of certain elements suggests the existence of a funeral kit which must have been present in the burial at the time of inhumation. The Cerny shares this existence of stereotyped grave goods – this time made in a purpose of saving – referring to the wild. The presence of a conventional outfit testifies the importance attached to these objects, less for themselves than for their funeral meaning.

#### **C02.04: The rise of individuality: Micro-politics of death rituals in Bronze Age, Hungary**

by Tamas Polanyi (Northwestern University, USA)

I consider the ways how broadening economic activities, and increasing importance and control of bronze led to changing interpersonal relations and finally to disarticulation of communities in Bronze Age, Hungary. My study stems from recent research on ritual economy that concerns sociopolitical change in small-scale societies, understanding the ways in which worldview, economy, power, and human agency interlink. Attempting to outline a middle-range theory of mortuary practices, I integrate multiple concepts: *biography of things* to examine changing meaning of objects through acquisition and appropriation; *rites of passage* to contextualize ritual consumption; and *stylistic behavior* to reveal power-laden processes of managing meanings and shaping interpretations. Through statistical analysis of Bronze Age burials I will illustrate how such framework of mortuary practices can reveal inherent contradictions and the negotiation of conflicting identities and agendas; facilitate deciphering indices of social relations; and help finding not the material context, but the behavioral context, of archeological remains. Moreover, the tripartite structure clarifies the micro-chronology of funerals in terms of social and political intentions of participants. Mortuary ritual then provides a historical processualist framework to study change and persistence through material practices surrounding death.

#### **C02.05: Rethinking “Religious Continuity” in the Archaic Period of Ionia: New Methodology for Old Material**

by Kenan Eren (Mimar Sinan Fine Arts University, Turkey)

One of the main considerations in the study of Archaic Greek sanctuaries has been to investigate any Bronze Age remains in the vicinity. If there are so, the choice of the sanctuary spot and its cultic characteristics have been questioned to find out if there is religious continuity from the Bronze Age, or rather a total break and change of religious behavior during the Iron Age. Long term choices of location in a limited geography have usually been studied in relation to a linear evolution scheme which often reduced and dismissed complicated phenomena. But one field of scientific inquiry, ‘the chaos theory,’ opens up the possibility of applying a different, more dynamic temporality into the study of long term activities.

The aim of this paper is to question whether it is possible to investigate the location and cultic activities in some Ionian Archaic sanctuaries without initiating a continuity or break discourse, and how scholars can introduce the factors of local physical and human geography to the study of long term religious behavior in a limited region. Applying the paradigm of a nonlinear but circular temporality in such an investigation may help to show that even though religious phenomena seems to be repeated in similar cycles, depending on its initial conditions, each cycle has unique characteristics.

#### **C02.06: The role of validity in theorizing prehistoric ritual: reconciling empiricism and interpretation in the Near Eastern Neolithic.**

by Erica Hughes (University of Liverpool, UK)

One way people have tried to incorporate discussions of ritual despite a dearth of evidence is through the invocation of Structured Deposition. There is, however, a reluctance to transform a merely descriptive vessel into an analytical tool. This prevents Structured Deposition from becoming a valid tool which can inform past ritual practice, despite repeated treatment of intentional deposits during the PPN. The deployed models fail to make the esoteric concrete enough to be susceptible to formal logic. Any theorist must constantly explore the methods in use and their validity when discussing ritual. Evaluating the logical structure of arguments for the identification and meaning of ritual acts can shed light on other, entangled, aspects of prehistoric lifeways.

It is implausible to assume that all human behaviour occurs in reaction to functional or environmental necessities. As such, any attempt at explanation must take into account the empirically underdetermined attributes of the actors. It is here that strict empiricist and relativist positions find themselves on opposite ends of a spectrum of explanation and interpretation. Neither analytic nor synthetic knowledge alone can help the archaeologist, and so she must slip in to the constantly shifting middle ground, searching for empiricist constraints to relativist positions.

#### **C02.07: “Ritual cows”: looking at Eneolithic cattle burials from Continental Croatia**

by ***Moja Pasarić*** (*Institute of Ethnology and Folklore Research, Croatia*)

Cattle burials in the Eneolithic of Central Europe are a phenomena that has been considered by scholars for already more than half a century (Gabałówna, 1958; Behrens, 1964; Zalai-Gaál, 1998; Pollex, 1999; Struhár, 2001; Szmyt, 2006; Horváth, 2010). Up to today there are around fifty registered sites where such finds have been identified. In the majority of cases the ritual nature of cattle burials was suggested, as they were usually linked with fertility cults (Hoti, 1989; Pleinerová, 2002), the bull cult (Kysely, 2002) or even the sun cult (Pollex, 1999). Although not particularly numerous cattle burials from the period of Eneolithic have been registered in Croatia as well. In order to investigate their nature and the possibility of their ritual character different methodologies have been considered. Besides the criteria for identifying ritual in the archaeological record when dealing with animal remains and the help of natural sciences in determination of the sex and age of the animal, approaches from culturo-animal studies which question the relationship between the man and the animal, ethnographical and folklore sources from the region have been used as well. Altogether, they proved to be valuable tools in rethinking the cattle burials at hand.

#### **C02.08: Missing Burials of Stone Age and Early Metal Period Finland – Beyond Modern Analogies**

by ***Jarkko Saipio*** (*University of Helsinki, Finland*)

The study of Stone Age and Early Metal Period burials in the area of Finland is severely limited by the acidic soil, usually destroying all the unburned organic material in thousands of year old archaeological contexts. The archaeological record of the local Late Neolithic (c. 2400–1900 BCE) is currently devoid of any detected burials. At the beginning of the Early Metal Period (c. 1900 BCE – 300 CE) cairns containing burnt bone and/or cist-like structures appear, but the invisibility of other mortuary contexts continue. The traditional interpretations of “the period of invisible burials” and the Early Metal Period cairns are governed by assumptions deriving from the modern European burial customs. The “missing” Late Neolithic burials are assumed to be simple pit inhumations, and the modern fleshed inhumations are also reflected on the cairn material. However, a closer look at the Finnish Stone Age and Early Metal Period material suggests that rituals such as defleshing and scattering of bone may be behind the gaps in the archeological record. This paper provides a review of the evidence of various human bone rituals occurring in the Finnish Neolithic and Early Metal Period dwelling sites and cairns.

#### **C02.09: Looking at practice and beliefs through a peephole – Some critical remarks on analysis based on recognizing changes in patterns**

by ***Sonja Hukantaival*** (*University of Turku, Finland*)

Both the ‘contextual archaeology’ formulated by Ian Hodder and archaeological applications of practice-theoretical approaches to questions of ritualization are based on an analysis of patterns recognized in the archaeological record. One idea is that a change in the pattern shows a change in belief. This method may well work when working with a large quantity of sources or when only very general trends are discussed.

However, these methods have also been used when discussing more specific questions of changes in historical folk religion. It was also my intention to use a similar analysis in my own study of ritual building concealments in Finland to recognize changes in the customs and beliefs. In addition to archaeological finds my study is based on abundant folklore sources on customs still in use in the late 19<sup>th</sup> century. Familiarising with the variety of this material has shown some problems with recognizing patterns from more scarce sources. To recognize changes in patterns the pattern must be well documented. Such an analysis on limited material may produce some very convincing-looking results, but they may have no correlation with reality! This paper discusses these problems and their implications on the archaeology of religion.

### **C02.10: The death of gods and the ascension of heroes – or who does the buckle of Kölked depict?**

by **Attila P. Kiss** (*University of Szeged, Hungary*)

Archaeological research connects one of the most important cemeteries of the German tribes of early Avarian period, which has been excavated near Kölked. A goldplated silver buckle was found in Kölked-B cemetery, grave 85., which has an unparalleled depiction on its shieldthorn. On the small area, a long haired, bearded man with two swords pointing to the sky and a snake that is swerving around his body, while biting in his hand, was visualized by the craftsman. In his publication, the excavating archaeologist Attila Kiss, connected the representation with the well – known character of the German – Scandinavian mythology Tyr, who according to Attila Kiss was the supreme God of German pantheon. The interpretation of the finding brings up several problems. Unfortunately, no exact parallel from the Carpathian basin or from Meroving territory is known, however the different elements can be found among the German (Scandinavian) portrayals of the time. Further problem is that there is no known representation in relating German mythology. There is no evidence for the motives (dragon/snake) on the buckle to be connected with German mythology, or the struggle of the German God, because early medieval heroic poetry has numerous similar epics demised to posterity.

### **C02.11: From monuments to religion? The Almendres megalithic complex, a case study in Alentejo (Portugal)**

by **Pedro Alvim** (*Durham University, UK*)

Ceremonial monuments often have a religious nature. As a foundation ritual, building such structures may be considered a religious act; on the other hand, religious monuments fixate principles for the future: architecture sets the framework for ceremonial and ritual practises. Thus monuments may be instrumental in the reproduction of religious ideology and practise through generations.

The Almendres megalithic complex in Alentejo (Portugal) is constituted by an enclosure and two outlier menhirs. Spatial analysis has provided evidence of alignments towards the sunset in Midwinter Solstice which include menhirs decorated with carved motifs suggesting highly codified meanings.

The Midwinter Solstice is a most significant and sensible moment in many societies. It symbolises the renewal of the year, conveying significant implications with regard to conceptions of cyclic time. On the other hand, sunset is usually associated with death and the passage to the underworld.

Taken together – architecture and megalithic art associated with alignments to the sunset in Midwinter – the evidence suggests that the Almendres complex was idealised under some form of religion for its architectural syntax, connecting people with time, the land and the sky, including connotations with birth and death, and reflecting some of the basic concepts that lie behind religious systems.

### **C02.12: Investigating the 'archaeology of religion' through astronomy**

by **Saša Čaval** (*Scientific Research Centre of the Slovenian Academy of Sciences and Arts, Slovenia*)

Though well established, archaeoastronomy is a vastly underutilised tool for understanding religions and placing 'the archaeology of religion' within its landscape context. While fundamentally an exact science, based predominantly on the principles of physics, its use in archaeology has not generally centered on its scientific component, but rather as layman interpretation; recent sensationalistic interest in the Mayan Calendar provides a good example. While archaeoastronomy can in no way be considered a standalone for investigating past religions, it nonetheless provides data and potentially answers that no other method can.

One demonstrable example rests with orientation. Although the religious ideology underpinning the drivers of religious construction is often lost over time, a record is invariably retained in the structure itself, principally in its alignment. This then provides data, and a lens, through which the landscape archaeology of religious buildings become source information, which, when contextualised, reveal specific elements detailing the decision making processes of past cultures, and the significance vested in specific places and spaces. The presentations elaborates these principles using a case study from Late Antiquity.



### **C02.13: The protestant religion through the study of protestant cemeteries in modern period in France**

by Isabelle Souquet-Leroy (Institut National de Recherches Archéologiques Préventives, France), Cécile Buquet-Marcon (Institut National de Recherches Archéologiques Préventives, France)

Since its development in the XV century the Protestantism in France met periods of acceptance by the royal power followed by a strict unofficial or official ban, which profoundly influenced the practice of this religion by the reformed populations.

Burial places are directly influenced by the changes of attitudes to the Protestants and may undergo transformations, even disappear from cities and villages. Their location and function are confidentially connected to the integration or rejection of this population in the catholic society of Ancien Régime

During preventive excavations in the last years several cemeteries were identified as being protestant. We propose to comment the typology of these funeral spaces from historical and archaeological data in order to understand how populations adapted their funeral practices when their religion was not integrated by Catholics or was even forbidden.

The study of graves allowed to know better the funeral practices during the periods of disorders or calm and to understand the view on death in the protestant religion through the gestures of the mourners during the funeral ceremony.

### **C02.14: Christianization in and of the Early Medieval Landscape in the Meuse-Demer-Scheldt Region**

by Maxim Hoebreckx (Vrije Universiteit Brussel, Belgium), Dries Tys (Vrije Universiteit Brussel, Belgium)

The process of conversion in Early Medieval Europe tends to be seen from a historical master narrative with little attention for the the role of material social practices offered by archaeological studies. From an archaeological perspective, the process of conversion and growing influence of Christianity in Early Medieval Societies seems much more complex compared to the supposed general master narrative. The spatial analysis of phenomena like the re-use of prehistoric barrows, the earliest monastic houses, churches and both inhumation and cremation burial sites between the Schelde valley and the Meuse valley in northern Belgium and the southern Netherlands sheds new light on the context, motives and chronology of this conversion process and on how Christianity affected the landscape and the perception of it.

### **C02.15: An Archaeological view on Christians Symbols – Can we really read them?**

by Timm Weski (Bayer. Landesamt für Denkmalpflege, Germany)

Archaeologists assume that religion played an important role in former societies. Perhaps this is right considering the labour, material and money that was necessary to erect and upkeep huge temples, grave monuments and other religious buildings. But what can we learn about the religion, if we only have artefacts which we consider to be religious symbols? To show how misleading this can be the opposite way will be chosen. Instead of looking at archaeological objects, a known religion, Christianity, will be analysed with the eyes of an archaeologist. Can we really detect fundamental parts of Christian belief like Monotheism, Doctrine of Saviour, Last Judgement, Christian Love, Achievement of Forgiveness, etc? If we cannot discover these topics in present day Christian symbols, how can we analyse an old religion of which we know nothing?

## **POSTERS**

### **C02.01-P-3: Religious Roman Seascapes in Province of Baetica (Conventus Gaditanus)**

by Sergio España-Chamorro (Universidad Complutense de Madrid, Spain)

The Roman province of Baetica is one of the most urbanized provinces in the Roman World. But this feature had already developed long before the arrival of Roman people. The indigenous population was influenced by oriental urban perspectives from Phoenician, Punic and Greeks.

In this context, the current andalusian coast was plenty of ancient temples dedicated to Graeco-Roman deities (Hieron of Aphroditas, Fanum Veneris, Insula Noctiluca, Gorham's Cave, Insula Luna) and Sacred hills (*Mons Calpe, Harení Montes, Promontorium Iunonis*) and other geographical features (fine Murgitanus) that were involved in an ideological context.

This poster is a display of the important religious seascape of ancient coast of Roman Province of Baetica (Conventus Gaditanus) in the south of the Iberian Peninsula. The main features and remains will be placed in their geographical and historical context. This will provide a better understanding of the importance of the religion in the maritime context.

**C02.02-P-3: E pluribus unum (Out of many, one)**

by [Ilaria Tirlo](#) (*University of Rennes 2, France*)

The analysis of the ritual contexts in Southern Italy during the First Iron Age shows that several methodologies have to be used for the reconstruction of ritual. So some italic contexts of Southern Italy will be analyzed through the literary sources, archaeology and archeometry. Particular attention will be given to the cultic practices of the votive deposits: all the archaeological attestations of depositional ways of placing the pottery or the bronzes during the rite is studied with the helpful presence of anthropology.

Keywords: Southern Italy, votive deposits, hoards, archeometry, First Iron Age, depositional ways, ritual

## Session C03

### Biography and Histories of Archaeology: present state and future scopes

Friday, 6 September 2013, 08:30–13:00

Room: UU 307 (Building 2, 3rd floor)

**Organisers:** **Ingrid Berg** (Stockholm University, Sweden), **Ulf R. Hansson** (University of Texas at Austin, USA) and **Anna Gustavsson** (Swedish Institute of Classical Studies in Rome, Italy)

Historians of archaeology have since the early days of the discipline used biography as a narrative tool when analyzing and explaining the emergence and development of archaeology. The traditional use of biography in the history of archaeology has resulted in series of publications on the great men (and occasionally women) of archaeology, often focusing on the individual scholar, creating an unbalanced focus on the spectacular person and the spectacular discovery.

In recent times, the concept of biography in archaeology and material culture studies has been used to discuss the life-histories of places and the biographies of objects, as part of a turn towards the recognition of pluralistic meanings and negotiations of material culture. Studies drawing on Actor-Network Theories (ANT) have high-lighted the role of institutions and social networks in the production of archaeological knowledge. In the field of the history of archaeology, we also see the emergence of a number of innovative studies using various forms of biography to critically explore the limits of the discipline, making past archaeological practices relevant in the present. By combining material culture studies and network theories with aspects of the history of archaeology, we can find new ways of integrating various types of biographies, not only of the archaeologist as an individual, into our research.

This session will critically discuss the potential and limits of biography as a tool for writing histories of archaeology. We invite papers on all aspects on biography and the history of archaeology, especially biographies of publications, biographies of institutions, biographies of archaeological sites, excavation projects and landscapes, network biographies and life-writing.

#### C03.01: On the Nature of Maglemose

by **Tove Hjoerungdal** (University of Gothenburg, Sweden)

The project “On the Nature of Maglemose. Meeting Methodologies from Georg Sarauw to Eva David and Beyond” takes up a few explicit methodological innovations in the extensive research history of Maglemose. The project also discusses the important question of how to write histories of archaeology.

With an inspiration in post-humanist feminist approaches, our effort focuses on new ways of exploring practice studies and meeting methodologies and on what comes out of intra-active practices. Methodologies of practice studies take inspiration from the philosopher Joseph Rouse, the anthropologist Annemarie Mol, the physicist Karen Barad, while theoretical approaches owe much to the philosopher Donna Haraway.

Archive material from Georg Sarauw has a central position in the project, as practices of research are thoroughly recorded in his material.

*The project “On the Nature of Maglemose. Meeting Methodologies from Georg Sarauw to Eva David and Beyond” is financed by the Swedish Research Council 2012–2014.*

#### C03.02: Wroxeter and the Development of Archaeology in Britain

by **Roger White** (University of Birmingham, UK)

The deserted Roman town of *Viroconium*, at Wroxeter in the English West Midlands, is at first glance an unimpressive site: a single wall standing 7m high and the ruins of a baths are virtually all that greets the visitor, yet the biography of the monument presents us with a rich and varied history that is little known. Among the famous names associated with the site are the naturalist Charles Darwin, the engineer Thomas Telford and the war-poet Wilfred Owen. It was one of the earliest monuments open to the paying public in Victorian Britain (1859) and has been investigated by many leading archaeologists, including Bushe-Fox, Mortimer Wheeler, Kathleen Kenyon, and Philip Barker, each bringing their own methodological advances to the study of the site. The rich association of aerial photography, archaeology and geophysics has resulted in the creation of the first detailed Atlas of a Roman town in Britain (published 2013), the companion volume to a pioneering study of the relationship between a Roman town and its hinterland. This paper seeks to bring this fascinating and compelling story to a wider, European, audience. It also seeks to set an agenda for future research on the monument.

### **C03.03: Chronotopes in Multivocal Biographies**

by Torgrim Sneve Guttormsen (*The Norwegian Institute for Cultural Heritage Research, Norway*)

The paper explores how things, in this case the so-called Oseberg Cart found in the the Oseberg ship burial, at present located at the Viking Ship Museum in Oslo, constitute a focal point for examining multivocality in biographies. Things have biographies and take part in major biographies, such as the biography of the museum and of the Nation. Biographies have, like all story-making, a time-space which the history spins around. Based on the Russian literary theorist Mikhail Mikhailovich Bakhtin's (1895-1975) idea of the Chronotope (gr. kronos=time, topos=space), the Oseberg Cart can be understood as a material chronotope. Sites, landscapes, museums and monuments can be understood as chronotopic since they partake in producing storied worlds and interact in contemporary rhetorics of heritage uttered as cultural/political utopias (a contemporary and desired or wishful world). Chronotopes become in other words a focal point for examining relationships between imaginations and realities, and the changing aspects of this over time. In the paper, a special emphasis is given to the function the Oseberg cart had in the establishment phase of the Viking ship Museum in Oslo in the early 20th century.

### **C03.04: Visible and Invisible Masculinities in the Eketorp Research Project**

by Elin Engström (*Stockholm University, Sweden*)

Aspects of gender in archaeology have mostly highlighted women and femininities, leaving men invisible as gendered beings, albeit firmly visible as representations of "great men". This paper seeks to address aspects of masculinity and its representations in archaeology and cultural heritage institutions. The point of departure is the archaeological site of Eketorp, on the island Öland, Sweden. The Eketorp excavation between 1964-74 is one of the largest archaeological projects in Sweden and in many ways it inevitably circles around the initiator of the project, Professor Mårten Stenberger. History of archaeology does in many ways explore how personal relations with representatives from university, heritage and political institutions interconnect through the social networks enabled by the archaeological excavation. Acknowledging masculinities as an important aspect of these relations is one way to critically study how the archaeological practice itself creates gendered space. The Eketorp excavation was followed by a full-scale reconstruction of the site, a unique event in Swedish heritage management, albeit not without a widespread debate. Thus, the aim of the paper is to explore how representations of masculinities in the Eketorp research project are established, maintained and performed through several heritage institutions.

### **C03.05: Biographies of Landscape through Masigli's Biography**

by Vladimir Mihajlovic (*Institute for Balkan Studies SASA, Serbia*)

The Middle Danube Basin, as part of the Ottoman Empire, was left virtually unknown to the Western cartographers up until the end of the 17th century. The work of Luigi Ferdinando Marsigli (1658–1730), a soldier in the service of the Habsburg Court and an active member of a pan-European scientific community of the time, had a major role in placing this region on the geographical as well as symbolic maps of Europe. He spent nearly twenty years, first as a military engineer during the Great Turkish War (1683–1699) and then as a leader of a Habsburg border commission, collecting scientific information, specimens, antiques, taking measurements and observations for his work on the Danube.

Working in the antiquarian tradition, Marsigli published one of the first chorographies and collections of archaeological material from this part of Europe. In other words, on his journey along the course of the Danube, Marsigli had discovered and presented the present and the past of the region, but he also influenced its future by creating a border between the two empires. The aim of the paper is to show how the study of a personal biography could lead to the re-reading of biographies of landscape as well as of biographies of regional archaeologies i.e. their pre-disciplinary forms.

### **C03.06: Actor-Network Theory and International Relations in European Archaeology in the Post-World War II Era**

by Margarita Díaz-Andreu (*ICREA-Universitat de Barcelona, Spain*)

This paper will analyse how scholars may be affected not only by ideas in their learned environment, but also by the social networks of their academic milieu and beyond. To date, most of the studies that have investigated this issue have focused on the academic and personal links formed by colleagues who are frequently in contact. In contrast, this paper will critically explore the impact on science of the exchanges between scholars who do not see each other frequently, because they live in different countries. This paper will look at international relations in archaeology on the basis of the information obtained in the Pericot archive, focusing on the processes that lead archaeologists from different countries to communicate with and visit each other and to congregate at major international congresses.

Prof. Pericot (University of Barcelona) was one of the key figures in the network of the major international congress of archaeology between the 1940s and the 1970s, the CISPP.

### **C03.07: Objects, Bodies and Places. The Archaeology of an Archaeologist's Life.**

by Johan Hegerdt (*National Historical Museum, Sweden*)

The point of departure for this paper is a biographical research project that I run together with Dr Anna Källén dealing with Olov Janse (1892–1985) and his important wife Renée (1903–2000). Janse, a Swedish born archaeologist, spent the first years of his career in Sweden, then in France and in the 1930s in Indochina. From 1940 onwards they lived in the US (for project info see [www.olvjanse.com](http://www.olvjanse.com)). This paper focuses on the interplay between objects, bodies and places mapping the biographies of Olov and Renée. Archives and museum collections from Hanoi to Washington DC play an important part. Pictures show how their bodies not only change because of age but also because of the places that they occupy. Their movements depend on the locations of objects of desire, which means that objects preconditions their being in the world. Objects open doors, are collected and shipped from remote places to museums in Europe and the US, but the world is also changing, meaning that they not only have to replace themselves, but also rethink themselves and even reshape themselves to be able to make use of the position, prestige and power that is offered them by these objects.

### **C03.08: Writing the Lives of Outsiders in Archaeological Biography: a Woman and an Amateur as Case Studies**

by Stephen Dyson (*University at Buffalo, USA*)

Archaeological biography is still a limited, and often old fashioned medium. Too much is concentrated on 'great men' and on the exotic or the professional. However, archaeological biography also allows a full exploration of the role of archaeology in the larger society. That is especially true if one expands from the archaeological elites to the professional 'marginals'. Such lives, where subjects are less imbedded in the core profession, allow the construction of a larger world of archaeological impact.

I will employ two case studies from my own biographical research. The first is a female archaeologist (Eugenie Strong). Her richly documented life illuminates the complex struggle of a woman to enter the profession. She was a political conservative with fascist identifications. Her life provides insights into archaeologists and politics, but also into how the political views of women might be later viewed differently from male views. The second is a late nineteenth century amateur William J. Stillman, whose archaeological interests extended from photography to excavation. His life overlapped with the professionalization of American classical archaeology and the marginalization of the amateurs so important in 19th century America.

### **C03.09: King Gustaf VI Adolf of Sweden and Biographical Approaches to the History of Archaeology**

by Frederick Whitling (*Swedish Institute of Classical Studies in Rome, Italy*)

Gustaf VI Adolf (1882–1973), the former King of Sweden (1950–1973), was an unusual monarch in many ways. During his long period as Crown Prince (1907–1950), Gustaf Adolf functioned as chairman of a number of societies, committees and boards; his active participation and interest in the subject matter of these organisations is notable – the fields in question being archaeology and art history. This active and influential role of the former King is the object of a comprehensive and contextual study that I am presently carrying out, based on archival material in the Bernadotte Archives (Stockholm). The archaeological interests of the former King are well known; his role as mediator and patron of the arts less so. After becoming King in 1950, Gustaf Adolf became honorary chairman and honorary member of a number of national academies, associations, societies, institutes and committees. This contribution discusses the dynamic of individuals–institutions–structures (tangible as well as metaphorical) in biographical approaches to the history of archaeology, focusing on the case of Gustaf VI Adolf as the focal point of interrelated scholarly networks.

### **C03.10: The Role of Lifewriting, and Ways of Writing about Lives when Working with History of Archaeology**

by Oscar Ortman (*The County Museum of Bohuslän, Sweden*)

There are two aspects in my paper; a biographical and a mythographical aspect. The intention of the biographical aspect was to illuminate the life and research of the West Swedish archaeologist Åke Fredsjö (1913-1978). The aim was to study his research on West Swedish Mesolithic and how it was carried out.

The intention of the mythographical aspect was to focus on how archaeological knowledge is produced; to show how the mode in which research is carried out affects the contents and the result of the research.

Through the several “gentagelser” – repetitions that my case studies have been going through, layers by layers of information have been added to the picture. The story about the history of West Swedish Mesolithic research has become more and more intricate. This gave an opportunity to discuss life writing, discourse analysis, social studies of humanities and concepts like symmetry, mythography and “gentagelser” – repetitions.

The transformation from a biographical study to a mythographical study took place through repetitions, where my reading of written and oral information about West Swedish Mesolithic gradually changed into another understanding. Focus is no longer on the content of the account but on how it was told.

## POSTERS

### **C03.01-P-1: Mendes Corrêa and the 1930s Excavations at the Muge Shellmiddens (Portugal)**

by Ana Abrunhosa (*University of the Algarve, Portugal*)

The Mesolithic shellmiddens of Muge (Tagus Valley, Portugal) were discovered in 1863 by geologist Carlos Ribeiro (1813–1882). For the last 150 years (1863–2013) they have been the object of research by various archaeological teams and are considered one of the main Portuguese Prehistoric sites.

In the 1930s, the investigations were carried out by Dr. Mendes Corrêa, Professor of the Faculty of Sciences of the University of Porto and also a man of politics with strong connections to the government of the time. Mendes Corrêa and his assistants – Rui de Serpa Pinto, Santos Júnior and Alfredo Athayde – from the Institute of Anthropology of the Faculty of Science of University of Porto, were responsible for the production of documents relating to their work (photographs, topographic maps, correspondence, notes and reports) that help us understand their research aims. The study of the new documentation revealed the motivations, strategies, programming, development work, and field work techniques of that time.

This work hopes to contribute to the study of the history of archaeological research in Portugal with special emphasis on the studies conducted in the Mesolithic shellmiddens of the Tagus Valley in the 1930s.

### **C03.02-P-1: In the Footprints of ... Theodor Wiegand**

by Patricia Rahemipour (*Deutsches Archäologisches Institut, Germany*)

Wiegand (1864–1936) was a hatchet man. He never focused on the tiny pieces but on the great program behind. He wanted to excavate the city and not the settlement. He gained an overview through the "Deutsch-Türkische Denkmal-schutzkommando" by taking aerial photos of archaeological sites and he had a life-long idea of an architectural museum, the modern Pergamon Museum. The DAI Archive contains the estates of about one hundred archaeologists. One of the greatest sources is the material of Theodor Wiegand. An amount of circa 50 crates contain personal letters, scientific essays, photographs etc. The idea is to make this material usable for a greater public, to digitalize it and to write a book. Achieving the latter is not easy. Wiegand was a multifarious person. The process of approaching him as a person and as part of history will be discussed in this paper: Is it helpful to write a chronological biography or to follow the networks he built by marrying Marie Siemens? Or would focusing on greater projects – his personal focus – bring the best result?

This poster discusses the methodological implications of

- writing on Wiegand and his idea of a "Pergamonmuseum".
- interpreting the estate.
- interpreting the networks.

### **C03.03-P-1: The Turkish Story of the Excavations in Larisa (Buruncuk) – 1902–1932/34**

by Turqut Saner (*Istanbul Technical University, Turkey*), Gizem Mater (*Istanbul Technical University, Turkey*)

The Swedish-German undertaking in Larisa (Buruncuk) was one of the earliest and most fruitful archaeological expeditions in western Asia Minor. The excavations, focusing on the early stages of eastern Greek art, were initiated by Lennart Kjellberg and Johannes Boehlau in 1902. After a long break, the studies ended with three final campaigns from 1932 to 34. Written and visual documents which are preserved in Turkish archives today shed light on the local (Ottoman and Turkish) perspectives in the course of the archaeological work at Larisa. The exchange of letters between

Kjellberg-Boehlau and the museum directors in Istanbul shows that the initial bureaucratic correspondence proceeded in a formal-but-personal style. The appointment of local commissars and their reports emerge as a further topic of the background of excavations. The transportation and registration of finds as well as the analyses of the objects in the museum followed accurately the rules of Turkish bureaucracy. Major publications on Larisa in three volumes can certainly be considered as a result of the collaborative efforts of all Swedish, German and Turkish parties involved.

### **C03.04-P-1: A Biography of Argive Midea**

by ***Ann-Louise Schallin*** (*Gothenburg University, Sweden*)

Midea is the name of a village situated on the fringe of the Argive Plain on the Peloponnese in Greece. The village is dominated by the 270 m high hill with the same name. The hill was inhabited during the Prehistoric period, and most notable are the remains of the Late Bronze Age citadel wall, which encircles the top of the hill and which enveloped the Late Bronze Age acropolis site, which for a number of years now has been the focus for archaeological investigations conducted jointly by Greek and Swedish archaeologists.

The present poster aims at creating a biography of Midea, focusing on the remains on the hill, but also incorporating the nearby cemetery at Dendra in order to seek information concerning the possible relationship between the two sites, which are believed to have been closely linked, at least during the Late Bronze Age. The biographical investigation will encompass the prehistoric and the ancient remains, but also the modern era of early and later investigations. A special emphasis of the study will be put on the early archaeological investigations: the methods of practice and above all, the impact of these early interpretations on the explanatory models of today.

### **C03.05-P-1: Archaeological Societies in the Russian Empire: the Case Study of the Odessa Society of History and Antiquities**

by ***Andrey Shamanaev*** (*Ural Federal University, Russian Federation*)

Archaeological Societies were significant phenomena in the history of archaeology in the Russian Empire. They coordinated the efforts made by experts and archaeological lovers in the study, popularization and preservation of archaeological sites. Traditionally, historians of archaeology have analysed the scientific achievements of the organizations. Currently, the study of archival documents and published material has led to a reconstruction of a wide range of activities associated with the societies. The Odessa Society of History and Antiquities was founded in 1839 and it was the first of such organizations. Its structure consisted of the Odessa, Feodosia, Kerch (Melek-Chesmesskiy mound) archaeological museums and medieval fortresses in Sudak and Akkerman. It carried out the excavation program in Chersonesos (Sevastopol) and publishing projects. The history of the Odessa Society leads to an understanding of the archaeological societies' "way of life". The example of the Odessa Society demonstrates the combinations of the researchers' efforts and the monument protection management. The Society was closed in 1922 and its long "biography" allows us to study the contribution of the organization in the development of Northern Black Sea archeology in the middle of the 19<sup>th</sup> to the early 20<sup>th</sup> century.

## Session C04

### Collapse and regeneration of past societies

Thursday, 5 September 2013, 08:30–13:00

Room: UU 307 (Building 2, 3rd floor)

**Organisers:** Miroslav Bárta (Czech Institute of Egyptology, Czech Republic), Per Lagerås (Swedish National Heritage Board, Sweden), Lars Ersgård (Swedish National Heritage Board, Sweden) and Caroline Arcini-Ahlström (Swedish National Heritage Board, Sweden)

Collapse, crisis and transformation of cultures and civilisations are integral parts of human history. We may look for underlying causes to crises in internal factors within a society, in external factors, or in a combination of both. While negative effects may be evident – like starvation, epidemics, social unrest, war, natural disasters, overexploitation of natural resources, etc. – causal relationships are often complex and difficult to sort out. The ability to cope with crises has varied between societies and through time, and has depended on internal social and cultural factors. Crises may in some cases have led to societal collapse but may also have resulted in regeneration and social reforms that enabled further development and growth.

The rise, peak, decline, collapse and regeneration of cultural complexes and civilizations are the main topic of this session. We will discuss societal crises from an archaeological and interdisciplinary perspective, and we welcome contributions, both theoretical and empirical, regardless of their geographical or chronological context. By comparing individual studies we aim to identify and evaluate the similar if not identical patterns and processes in the history of human culture and society. Therefore, what should also state that within focus of the session are also the dark periods which followed after the so called “collapse” event. because “collapse” means in most cases nothing else but a major loss of complexity and a deep transformation of the processes which exhausted their former potential.

#### C04.01: The impact of volcanic events on hunter-gatherer societies – a comparative perspective

by **Felix Riede** (Aarhus University, Denmark), **Gerald Oetelaar** (Calgary University, Canada), **Richard Vanderhoek** (Alaska State, USA)

This paper places the impact of large volcanic events on past hunter-gatherer societies in comparative perspective. Beginning from the theoretical standpoint – inspired in part by the historical sociology of William H. Sewell (1996) and in part by models of punctuated equilibrium in evolutionary theory – that ‘events’ constitute critical episodes of historical change, we argue that a comparative perspective is necessary for examining patterns of causation. We here present preliminary thoughts on a form of natural experimental case-control study (*sensu* Diamond & Robinson 2010) that examines the ecological and societal consequences of three major volcanic eruptions that affected hunter-gatherers: (1) The Aniakchak eruption (3650 BP) in Alaska, (2) the Mazama eruption (7630 BP) in western North America, and (3) the Laacher See eruption (12920 BP) in western Europe. Beyond basic volcanological parameters, we consider how the particular response options available to contemporaneous foragers as well as their placement in social and demographic networks likely conditioned these responses.

#### References:

Diamond, J. M., and J. A. Robinson. 2010. *Natural experiments of history*. Cambridge, MA: Belknap Press.

Sewell, W. H., Jr. 1996. Historical Events as Transformations of Structures: Inventing Revolution at the Bastille. *Theory and Society* 25:841-881.

#### C04.02: Collapse and regeneration in the Prehistory of Central Europe

by **Jan Turek** (University of Hradec Králové, Czech Republic)

The rises, collapses and regenerations of cultural complexes and phenomena occurred repeatedly throughout the European Prehistory. In Central Europe it was mainly collapse of the tradition of collective values that gradually faded from the mid Fifth Millennium BC. The initial Neolithic society could not continue without a major change in the farming system and social relations. This change dramatically accelerated at the beginning of the Third Millennium BC. The transition that I am discussing in this paper was not induced by introduction of new subsistence strategy or major climatic change. The Third Millennium changes comprise the development of social relations and transition of cosmology amongst the European Copper Age farming communities. Similar changes can be seen at the beginning of La-Tène Period in the 4<sup>th</sup> and 3<sup>rd</sup> Century BC when the symbolism of the tribal aristocracy (hill-forts, elite tombs) was replaced by the “Celtic expansion” and rather egalitarian burial rites. Further change occurred at the end of this period, when people abandoned the collapsed fortified Oppida and set a new reality of the Roman period. I aim to identify the



repeating patterns in the development of human culture and society written in the palimpsest of many generations of farming communities.

#### **C04.03: Final Copper Age Collapse and the appearance of Bronze Age 'Nuragic society' of Sardinia (Italy)**

by *Maria Giuseppina Gradoli* (*University of Leicester, UK*)

This abstract is part of my current PhD research '*Dynamic Social Changes and Identity. A petrological study of Bronze – Iron Age pottery from Sardinian Nuraghi*' at Leicester University (UK). It studies the sequence of social changes anticipating and accompanying the first appearance of Nuraghi\* towers of Sardinia (1600–900 BC).

At the moment, I am concentrating on the causes of collapse of the previous Copper Age societies (3200 BC) at the transition to the Early Bronze Age (2300 BC) marked by a significant break in the continuous pattern of settlements. Indeed, after 2300 BC many long-lived sites were abandoned while a simpler pattern of settlement emerged, marked by a shift in geographical position, a different architecture, a decrease in population and a different set of pottery vessels. The petrological study of these vessels is starting to shed new light on the role of 'technology' in shaping social structures with special attention to the micro-scale context of production, the cooperative process of vessel manufacture, the expression of practical knowledge, and its gender implications.

\* Nuraghi are round towers, unique of Sardinian Island, built of large blocks of rock in horizontal rows and roofed by corbelled vaults. Around 7,000 nuraghi (Middle-Final Bronze Age) are still present.

#### **C04.04: Social Complexity, Sustainability, and Resilience: The Sardinian Middle Bronze Age in Context**

by *Emily Holt* (*University of Michigan, USA*)

The appearance of the Nuragic culture during the Sardinian Middle Bronze Age is the earliest archaeological indication of social complexity on the island. During the Late and Final Bronze Age (1365-1020 BCE), the Nuragic culture developed into a complex society with an impressive program of monumental building. Monumental building ceased at the end of the Final Bronze Age, however. During the Early Iron Age (1020-900 BCE), the Nuragic culture may have experienced a decrease in organizational complexity. The monumental nuragic towers were allowed to collapse, settlement was disrupted at many sites, and some sites were abandoned altogether.

This paper will consider the political economy of early Nuragic society from an environmental archaeology perspective. It will use palaeobotanical remains, phytoliths, wood charcoal, and fauna to reconstruct the environment at a Middle Bronze Age Nuragic site. It will identify subsistence and prestige strategies and assess the level of human impact these strategies had on the local resource base during the site's occupation. Ultimately, this paper will ask whether the political economy of early Nuragic society was sustainable and consider the implications of this question in light of the severe cultural disruptions that occurred during the Final Bronze Age and Early Iron Age.

#### **C04.05: How and why did the Minoan Neopalatial System collapse?**

by *Vera Klontza-Jaklova* (*Masaryk University, Czech Republic*), *Manolis Klontzas* (*Masaryk University, Czech Republic*)

The Neopalatial period is usually understood as the zenith of Minoan culture but contemporary research no longer supports interpretations of this as a period when all of Crete enjoyed a 'golden age'. The period starts with significant destruction and rebuilding of all main palace sites and with enlargement of Knossos. LMIA seems to be the period when power becomes concentrated and the state structure crystallizes, with Knossos as its capital. This progressive development brought forth antagonism among some social groups and created competing poles. These tendencies were speeded up by the eruption of the Santorini volcano. LM IB society were decentralized, returned to the pre-state stage. Almost all known sites were affected by destructions – brought about by humans, well prepared and directed at specific parts of settlements. After those destructions both the decrease in population and number of settlements is indubitable. Only Knossos palace seems to operate normally. The other sites never fully recovered and many of them were not re-settled before the LM IIIA period and even then it was on a much smaller scale. How and why did the Neopalatial power system collapse? The answers to these questions directly affects interpretations of the subsequent periods.

#### **C04.06: Theoretical perspectives on the collapse of the Mycenaean civilization and political transformation**

by Nicolaie Sorodoc (University of Oulu, Turkey)

Prof. Robert Drews in his 1993 study on the end of the Bronze age, "*End of the Bronze Age: Changes in Warfare and the Catastrophe ca. 1200 B.C.*" discusses alternative explanations of the *collapse* under the following titles: earthquakes, migrations, ironworking, drought, systems collapse, and raiders. He proposes a military explanation of the "*Catastrophe*." I am particularly interested in propositions within the framework of systems theory which seem to be in sharp contrast with Drews' military explanation. The critical question is whether Drews' thesis can or cannot be incorporated within a systems theory perspective. The present paper therefore aims to reevaluate the debate within the framework of recent research with a focus on the collapse of the Mycenaean civilization, and its ensuing effects upon the Greek political landscape during the Iron Age.

#### **C04.07: Abandonment as non-crisis**

by Orri Vésteinnsson (University of Iceland, Iceland)

In archaeology the abandonment of settlements and regions is frequently taken as a sign of crisis on the simple premise that people will stay in place unless something goes wrong. Yet in many cases the relocation of settlements and the abandonment of whole regions is a regular occurrence. Where the physical infrastructure of societies is light, abandonment tends to be explained as a corollary of extensive land-management practices, e.g. slash and burn agriculture, but when more permanent installations and monuments are abandoned it is usually thought safe to blame this on a crisis, and then it becomes the archaeologist's task to explain what was the nature of the crisis and why it arose. Such a view leads to a conception of the past as long periods of stability or growth interspersed with shorter periods of crisis. With reference to cases of abandonment in the North-Atlantic and North-America in the second millennium AD this paper argues that this conception is unhelpful; that crises should rather be seen to be ubiquitous; that abandonments are but one of several possible reactions to challenges that can arise and that in many cases they can easily be seen as positive and progressive steps.

#### **C04.08: Environmental and social responses to the Black Death in Sweden**

by Per Lagerås (Swedish National Heritage Board, Sweden)

Research on the late-medieval crisis in Sweden has so far mainly been based on the historical record. In a project in progress – The archaeology and ecology of collapse: social and agricultural change following the Black Death in Sweden – a multidisciplinary approach is applied. In the palaeoecological part of the project, a large set of pollen data from more than 30 sites is used to study changes in vegetation and agricultural land use. The results reveal significant changes due to farm abandonment during the 14<sup>th</sup> and 15<sup>th</sup> centuries, in particular in marginal upland areas. Decreasing cereal-pollen percentages indicate the abandonment of arable fields, while the relationship between grass-land pollen and tree pollen seems to indicate a relatively restricted reforestation on former pastures. The latter is important for an understanding of the role of animal husbandry in a time of population decline, and may reflect social strategies to handle an excess of land but shortage of labour. These strategies together with their environmental consequences may in turn have affected the severity and extent of the crisis. The results will be presented and discussed in relation to the historical record.

#### **C04.09: Changed diet and increased stature for surviving generations of the Black Death?**

by Caroline Arcini (Swedish National Heritage Board, Sweden)

You have to eat to get big and strong, says the parent to the child. Knowledge about the correlation between food and stature is deeply rooted in humans and the statement is orally inherited from previous generations, who may have experienced food shortage or even starvation. Modern research indicates that nutrition is a significant factor for growth, and, consequently, stature may be used in historical studies as an indicator of nutritional conditions. In a project in progress, a large data set of human skeletons from medieval churchyards in Sweden is used to study changes in living conditions and diet during the Middle Ages. The material represents both urban and rural populations as well as different social strata. Historical data indicate that strong population growth AD 1050-1350 forced people to live on the margins, while the dramatic population drop following the Black Death may have resulted in improved living conditions, in particular for the lower classes. This hypothesis is tested by stature calculations based on approx. 2 000 human skeletons. In addition, possible diet transitions are studied by stable isotope analyses (N, C) of skeletons from before and after the Black Death.

#### **C04.10: A tale of three farmsteads – survival strategies in southern Sweden during the late medieval crisis.**

by **Lars Ersgård** (Swedish National Heritage Board, Sweden)

Studies of the impact of the late medieval crisis (14<sup>th</sup>–15<sup>th</sup> centuries AD) have usually been carried out on a general socio-economical level and have primarily been based on written sources. In this paper my aim is to view this impact in the archaeological context of the single farm and primarily in a mental-cultural perspective. How is the late medieval crisis visible on a social micro-level and how can this be studied in the material culture of the single farm? Three archaeologically investigated farms in the southern part of Sweden and their development during the late Middle Ages are discussed in a comparative perspective. The farms are located in three culturally and environmentally different regions. A main problem is in what way specific cultural conditions have been of importance when the people of the farms have chosen their survival strategies during the long crisis.

#### **C04.11: The punctuated equilibria theory and the demise of the Old Kingdom**

by **Miroslav Bárta** (Charles University in Prague, Czech Republic)

This study will focus on the demise of the Old Kingdom in ancient Egypt around 2200 BC and will relate this episode to a general framework of the Rapid Climatic Changes. It will apply theory of punctuated equilibrium for explaining some basic principles operating human society in diachronic perspective. It will be demonstrated that the end of the era of the pyramid builders came about due to a series of internal factors that were mutually interconnected and eventually led to a sudden and considerable loss of complexity of state administration and culture. The relationship between internal and external critical factors will be discussed and the nature of societal transformations discussed.

#### **POSTERS**

##### **C04.01-P-2: Middlesex in the 5th to 7th Centuries: The Burial Archaeology of a Highly Transitional Society**

by **Michelle Baugh** (Independent Scholar, France)

Although the Greater London area does not suffer from a lack of archaeological inquiry, there remains a gap in our knowledge of the wider region from the turbulent fall of the Roman Empire until the rise of the Saxon kingdoms. Using thematic analysis to explore all known burial sites from the former county of Middlesex from the 5th to 8th centuries, inclusive, this paper investigates the relationship burial sites have to the landscape of Central London and its hinterland, as well as the distribution and material culture found in Middlesex burials to provide additional insight into a highly transitional society in one of the biggest emporia of the Anglo-Saxon period.

##### **C04.02-P-2: The end of the Iron Age in Central Europe – an economic collapse?**

by **Alžběta Danielisová** (Institute of Archaeology CAS, Prague, v.v.i., Czech Republic)

In the models of social complexity including and interconnecting innovation, specialisation, political structure, market integration, but also migration, settlement pattern changes and abandonment, population growth plays a crucial role. Population pressure and over-exploitation of resources are very important concepts from which wide social phenomena have been explained. The consequences of increasing social complexity usually involve the transition from universal subsistence strategies to (institutionally introduced?) intensive exploitation of resources aiming for surplus production, which leads progressively towards increasing dependency outside the community. As the population approaches the limit, surplus production gradually declines. The situation develops into the crisis and settlements must be abandoned or the strategy must be transformed. This contribution focuses on the period of Iron Age in Central Europe when large agglomerations came into picture. When examining their economy an issue of the resource crisis induced by population pressure inevitably pops out. The archaeological evidence of rapidly increasing and then again decreasing occupation during the last two centuries BC could make “crossing the limit” one of the potential explanations of the end of the Iron Age agglomerations in Central Europe. The question addressed in this paper is whether this problem was not in fact much more complex.

## Session C05

### Examining Social Complexity within Bronze Age Eurasian Steppe Societies

Saturday, 7 September 2013, 08:30–18:30

Room: UP 101 (Building 2, ground floor)

**Organisers:** **Bryan Hanks** (University of Pittsburgh, USA) and **Roger Doonan** (University of Sheffield, UK)

Characterizing social complexity has been an enduring focus within archaeology for over a century. Virtually every class of archaeological material and data has been used, at some point, in studies to inform understandings of social development in early societies. Among the most common evidence used is settlement and mortuary patterning, technological practice, and exchange networks. In turn, such data have come to be seen as proxies for social development and the means through which social structure can be characterized and then compared. However, the relationship between field evidence, social structure, and data should not be assumed to be simple and as such the central importance of effective methodologies coupled with comparative theoretical frameworks must be explicitly acknowledged and continuously evaluated.

This session draws together a number of papers that have sought to establish such matters in the Middle Bronze Age (2100–1700 BCE) of the Southern Urals, Russia. The central theme of the session explores how specific studies are incorporated within a wider project methodology that allows for the integration of diverse datasets ranging from wide area pedestrian survey, targeted high resolution geochemistry, geophysics, and targeted excavation. The session will review the outcomes of a number of studies which have sought to characterise Sintashta communities using a variety of field and post-excavation techniques and application of comparative models examining social complexity.

It is argued that conventional studies have too often developed elaborate theories of social development and interaction without undertaking the necessary gathering of new data or the critical review of existing data. Too often fragmentary and dispersed datasets are used to build grand syntheses of Eurasian communities which when critiqued cannot be supported. The session seeks to review contributions to date and sets out an agenda for future action in this area.

#### **C05.01: The Sintashta Collaborative Archaeology Research Project (SCARP) 2007–2013: Examining Bronze Age Social Complexity in the Southern Urals of Russia**

by **Bryan Hanks** (University of Pittsburgh, USA)

This paper discusses the original aims of the SCARP project and provides an overview of results to date. The primary focus of this international collaborative project has been to examine the Sintashta development through a more comparative anthropological archaeology approach that utilizes research models employed in other regions of the world. The Sintashta culture (2150–1750 cal. BC) has been actively debated in terms of social, political and economic complexity, however, detailed publications from excavations at Sintashta settlements stemming from the Soviet Period have not been produced. The SCARP project, and associated doctoral candidate research projects, therefore, have undertaken work at several Sintashta period settlements and their local catchment zones in order to investigate the nature and scale of copper metallurgy, subsistence economies, demography and settlement and cemetery phasing. This work has generated important new data on the nature of Sintashta social, economic and political organization and is leading towards a very different understanding of Bronze Age societies in the Eurasian steppe region.

#### **C05.02: Defining Eurasian Complexity**

by **Nikolay Kradin** (Institute of History, archaeology and ethnology, Far East Branch of the Russian Academy of Sciences, Russian Federation)

In this paper, I work towards a definition of Eurasian social complexity in prehistory as the result of historically layered patterns of social interactions among and between dissimilar regional and chronological social formations across the steppe. The key question the forms of complexity of pastoral societies before the origins of nomadic empires. Will be discussed the two examples – Slab burials culture of the Bronze/Iron Age in Mongolia and Baikal region, and Kitan eight polities confederation of the First Millennium AD. The nomads could be combined into the acephalos heterarchical tribes or chieftainships, or hierarchical chiefdoms. A group of the heterarchical tribes could be combined into the acephalos polity or weak chiefdom. In turn, the chiefdoms can be structured into the complex chiefdom or heterarchical confederation of chiefdoms. All of these structures were instable as the steppe "tumble-weed" and could change in both number of levels and strength of the internal ties. Often, the heterarchy-hierarchy dichotomy has depended on different objective and random factors including the individual properties of leaders. In the time of the successful charismatic chief, for example, the hierarchy of complex chiefdom could be created.

### **C05.03: The Concept of Archaeological Culture in Soviet-Russian Archaeology and the Social Complexity of the Bronze Age in Eurasian Steppe**

by **Igor Chechushkov** (University of Pittsburgh, USA)

The archaeological culture is the most common term in Soviet-Russian archaeology, for example within the scholarship of Bronze Age societies of the Ural-Kazakhstan Steppes. The most general definition of an “archaeological culture” was formed by Soviet archaeologists in the first half of the 20th century from the work of V.G. Childe who stated that the artifacts, regularly found associated in graves and settlements over a given geographical area, together with the peculiarities of the domestic and funerary structures in which they occur, constitute what is called a “culture”. There are dozens of interpretations of the archaeological culture concept as it is presented in the studies of the Eurasian steppe Bronze Age. For instance, archaeologists often do not agree on interpretations of Middle and Late Bronze Age cultural categories, such as Sintashta, Petrovka and Alakul’. The discussion presented in this paper focuses on theoretical explanations of materiality that should precede social reconstructions. The goal is to critically examine presented interpretations of archaeological evidence and discuss ways to include social, economic and ecological dimensions with the purpose to explain Bronze Age sites, material culture and social complexity.

### **C05.04: Social Demography and the Emergence of Complex Societies in the Bronze Age of the Southern Urals, 2100–1000 BCE**

by **James Johnson** (University of Pittsburgh, USA)

The Middle Bronze Age (MBA) Sintashta cultural development (2100–1700 BCE) has been often modeled as a ‘Country of Towns’, as the antecedent for later cultural developments. Such models have assumed the presence and intensity of demographic and political centralization in MBA Sintashta communities. Such forms of centralization have been long expressed in agrarian societies as center/hinterland dynamics. Despite their prevalence in agrarian demographic patterning and political organization, center/hinterland relationships have been under-utilized for prehistoric pastoral societies on the steppe, in particular the MBA Sintashta. Building off the work of G. Zdanovich, A. Epimakhov, and E. Kupriyanova, and the ongoing work of the Sintashta Collaborative Archaeological Research Project (SCARP), a regional systematic pedestrian survey in the Ui River Valley between the MBA Sintashta settlements of Stepnoye and Chernorech’ye was conducted in 2011. Based on the survey data, demographic estimates for the Middle through Final Bronze Ages (FBA) were generated and used to determine the presence and scale of demographic centralization, as well as changes to political organization throughout these periods. This paper presents the results of the 2011 survey, the subsequent demographic analysis and critically evaluates changes in social complexity from the MBA Sintashta period to the FBA.

### **C05.05: Evaluating settlement pattern continuity and change in the Middle and Late Bronze Age periods (2100BC–1000BC) in the Southern Urals, Russia**

by **Denis Sharapov** (University of Pittsburgh, USA)

The following work utilizes Geographic Information Systems (GIS) techniques to analyze a regional dataset based on systematic stereoscopic readings of the Soviet era aerial photographic images (Zdanovich et al. 2003). In particular, the dataset features the locations and sizes of hundreds of structural depressions, attributed to either the Middle Bronze Age (MBA) (2100BC–1800BC) or the Late Bronze Age (LBA) (1800BC–1000BC) periods based on the local site typologies. The analysis employs the Kernel density function to analyze the regional spatial distribution of housing depressions for each period. Areas with a greater number and total surface area of structural depressions were interpreted as indicating greater per period occupational density. The results of the analysis indicate a certain level of spatial continuity among the MBA and the LBA occupation patterns, i.e., same general areas on the landscape show the highest occupational density in both periods. The LBA period indicates a shift toward a more dispersed settlement pattern, more detailed interpretations of which are dependent on determining a more precise level of contemporaneity among settlement clusters.

### **C05.06: Taskscapes of conflict: Interactions of landscape, resources, territorial markers and conflict in the Bronze Age Eurasian Steppe**

by **Miroslav Kocic** (University of Pittsburgh, USA)

The focus of this paper is to look at a rise in fortified settlements and increased signifiers of conflict and warfare present in the mortuary record during the Middle Bronze Age (2150-1750 BCE) of the Sintashta culture of the Southern Ural Mountains, Russia. The emergence of large, fortified settlements distributed through the landscape and the earliest

evidence of chariot technology has marked this as a dynamic period of socio-political change. One of the most striking characteristics of these settlements is the lack of agriculture, which is seen usually as a *conditio sine qua non* in relation to demographic growth and the emergence of urbanism. Such views are commonplace, even though a number of examples have shown that urbanization can be caused by several different stress factors. In this presentation, increased violence will be examined through the analysis of natural resources (nutritional, mineralogical) and their spatial relationships as having causal effects on urbanization processes and the militarization of societies.

#### **C05.07: Diet and Health in Bronze Age Eurasia: A Comparative Analysis of Dental Pathology and Stable Isotopes of Steppe Communities**

by **Alicia Ventresca Miller** (University of Pittsburgh, USA)

The complexity of pastoral lifeways is poorly understood at local communities as well as in the context of broader changes occurring during the Bronze Age. At the transition from the Middle (2100-1700 BC) to Late Bronze Age (1700-1400 BC) in central Eurasia, sweeping changes occurred in mortuary practices and patterns of settlement – from nucleated settlements with large populations (200-700 individuals) in the MBA, to smaller communities dispersed over a vast area in the LBA. Traditional interpretations link these changes to shifts from semi-settled agro-pastoral communities to more mobile forms of nomadic pastoralism. However, correlations between subsistence strategies and shifts in social practice have not been tested. Recent research in the Eurasian steppe indicates that pastoral diets were supplemented with freshwater fish, horticultural, or agricultural items. This paper explores the nature of subsistence economies in three communities: Bestamak (MBA), Kamennyi Ambar 5 (MBA), and Lisakovsk (LBA). Analysis of dental pathologies is used in conjunction with stable carbon and nitrogen isotopic analysis of bone collagen to better understand dental health in relation to dietary intake. Through a change in perspective, we move away from the examination of broad themes, and re-focus on smaller micro-regional discussions of community health and diet.

#### **C05.08: Archaeobotanical Evidence for Bronze Age Economy and Social Complexity (2100–1750 BCE) at the Stepnoye Settlement, Russia**

by **Chuenyan Na** (University of Pittsburgh, USA)

This paper will present the preliminary results of the archaeobotanical analysis of the Stepnoye settlement investigated during the 2008 and 2009 excavation seasons of the SCARP Project. The proportion of plant resources of the local economy of this region is speculative. Most research has focused on agricultural evidence and the roles and proportions of plant resources in the subsistence economy. However, more research is required to fully understand the role of cultivation and other plant resource use in social and economic organization. The archaeobotanical work at Stepnoye has taken flotation samples from all contexts of the excavation. These data can be used to show the distribution of different plant remains in the settlement. By comparing different samples from various contexts, we can evaluate patterns of plant usage at this site. The archaeobotanical assemblage of Stepnoye is dominated by wild Leguminosae taxa, especially *Vicia sativa* L. and two *Medicago* species. Given the lack of domestic taxa, there is no evidence to suggest that agriculture was practiced in this settlement. Furthermore, combining ethnography analogy, local ecological conditions, and archaeobotanical data, our preliminary study confirms that although agriculture was not practiced, other plant resources were important for the regional subsistence economy.

#### **C05.09: Household Production and Institutional Cohesion in the ‘Country of Towns’: Analogies from Economics**

by **Victor Roy** (University of Pittsburgh, USA)

The Sintashta cultural phenomenon has been frequently discussed in terms of political hierarchy, craft specialization and long-distance trade networks. Recent archaeological projects in this region, however, are beginning to provide a wealth of new empirical evidence that may be drawn upon to further develop and refine current explanatory models of this development. Nevertheless, the direction and depth of our understanding is contingent on the types of models and analogies we bring to bear on the evidence. A key problem associated with the Sintashta development is that it appears quite anomalous and our conceptual vocabulary restricts an appreciation of the particular way in which social complexity manifested within these societies.

For a fresh interpretation of the Sintashta phenomenon, I turn to analogies taken from economics. Evidence gathered from excavations at these sites place the Sintashta phenomenon at the nexus of microeconomic decisions of production and consumption as well as macroeconomic scales of regional cohesion and interaction. These bottom-up and top-down models connect in ways that illuminate the complexity of choices made in institutionally constrained and socially functional contexts.

#### **C05.10: Contexts as things: Developing approaches to the scale and organisation of craft production in prehistoric communities**

by **Roger Doonan** (University of Sheffield, UK), **Bryan Hanks** (Pittsburgh University, USA), **Derek Pitman** (University of Sheffield, UK)

This paper tackles two issues which are central concerns for many archaeological studies, specifically the organisation of craft production and the scale of interaction amongst disparate communities. Conventionally, the analysis of material culture, often from contexts of consumption, has played a significant role in addressing these issues. Observed variability (typological, compositional and technical) has been used to determine artefact distributions (connectivity) and infer modes of production (social complexity). Recent work undertaken as part of the Sintashta Collaborative Archaeological Research Project (SCARP) has approached these issues from a perspective which foregrounds the actual contexts of practice. In doing so, the project has developed a regionally specific integrative methodology that allows organisation to be inferred directly from primary production contexts whilst providing quantitative estimates of scale. Such estimates are important as they act as an important strand of evidence when framing discussions of interaction and exchange. The implications of these developments are discussed within the context of the Middle Bronze Age Sintashta communities of the Southern Urals.

#### **C05.11: Breaking the mould: investigating metallurgical practice in the southern Urals during the Middle Bronze Age**

by **Derek Pitman** (The University of Sheffield, UK), **Roger Doonan** (The University of Sheffield, UK), **Bryan Hanks** (University of Pittsburgh, USA)

This paper presents the interim results of a collaborative investigation that seeks to characterise the metallurgical tradition observed amongst Sintashta communities in the southern Urals during the Middle Bronze Age. Existing models have argued for intensive and centralised production which play a significant role in long-range exchange networks. This paper explores to what extent we can uphold the idea of a single unified metallurgical tradition and how such practices might have been organised. Particular attention is given to the identification of local practices at a number of Sintashta settlements and to detailing specific technological choices. Importantly, the results derive from an integrated methodology which drew together aspects of fieldwork, experiment and scientific analysis. As such, it is possible to discuss mining strategies, a detailed characterisation of metallurgical debris and insights gained in to the strategies associated with mineral beneficiation and furnace management. It is argued that Sintashta metallurgists shared understandings of metallurgical practice yet undertook a number of innovations to accommodate specific local conditions. This case study acts as an instructive example for wider studies of craft production and illustrates clearly how complex craft activities can show variance in terms of choice and practice.

#### **C05.12: Of clouds and silver linings: A preliminary assessment of the Faience Bead Assemblage from the Sintashta-Petrovka Cemetery at Krivoe Ozero, Southern Transural Region**

by **Peter Hommel** (University of Oxford, UK), **Roger Doonan** (The University of Sheffield, UK), **Bryan Hanks** (University of Pittsburgh, USA), **Derek Pitman** (The University of Sheffield, UK), **Nikolai B. Vinogradov** (Chelyabinsk State Pedagogical University, Russian Federation)

Faience or paste beads have been reported widely in Middle-Late Bronze Age contexts across the Eurasian steppe. However, in spite of their ubiquity, they have rarely been a focus of detailed investigation.

This paper presents the results of a rapid speculative PXRF survey of a group of 'faience' beads from the Middle Bronze Age Cemetery of Krivoe Ozero in the Troitsk District of Chelyabinsk Oblast'. The strategy adopted was one of near total sampling of the group using non-destructive PXRF to consider compositional variability and its correlation with macroscopic observations.

The results of this study, though clearly preliminary, were sufficient to establish the potential value of PXRF techniques when applied to faience *en masse*. This indicates that it is possible to identify broad compositional trends and also more subtle variations within these groups. Most surprisingly, this study revealed that several 'faience' beads were not made of faience, but, rather, as yet, an unidentified material wrapped in a pure silver foil. This technique has not been widely reported in the steppe and presents a new facet to our understanding of Middle Bronze age technology and technical relations in the southern Ural Region.

### **C05.13: Utilitarian pottery of the Sintashta communities**

by **Sofya Panteleeva** (*Institute of History and Archaeology, Russian Federation*), **Christina Königsmann** (*Goethe University Frankfurt, Germany*)

In the study of social complexity of Eurasian Bronze Age societies, scholars mainly concentrate on the most evident material patterns, including: residential architecture, mortuary practice, chariot technology, metallurgy, sophisticated ritual systems, etc. However, general relations also can be traced between social complexity and ordinary objects that are frequently recovered in abundance from archaeological sites. For example, it is necessary to draw attention to utilitarian pottery, which is associated with food preparation and consumption. As is well known, these activities have a high symbolic significance in any culture, often reflect underlying social structures, and define in many respects social and material relations. The paper presents the result of analysis of the Sintashta pottery collection gathered during the excavations of the Kamenny Ambar settlement (Southern Urals, Russia). Morphological, technological and decorative characteristics of pottery will be considered. The archaeological context of different classes of vessels will be also examined. This work has been undertaken within a German-Russian research project, supported by the DFG and RFBR (12-06-91330-ННИО\_a).

### **C05.14: Inventory complexes of the Kamenny Ambar (Ol'gino) Sintashta culture settlement (2100-1750 BC)**

by **Ivan Molchanov** (*Russian Academy of Science Ural Branch, Russian Federation*)

Recent field excavations at the Sintashta culture settlement of Kamenny Ambar (Ol'gino) have produced a large corpus of artifacts including: tools, ornaments, and weapons. Through detailed contextual study and use-wear analysis these materials offer an important view into prehistoric social organization, craft production, and patterns of changing technology. In order to determine object function, all non-metallic artifacts except for ornaments and weaponry were submitted for use-wear analysis. The metal objects were studied on the basis of comparative typology for the region. The resulting classification comprises several categories of artifacts that are characteristic of specific Middle Bronze Age handicrafts and activities, such as metalworking, leatherworking, spinning and weaving. Detailed analyzes have indicated specific patterning associated with diachronic occupation of the site. Stratigraphic layers of the Sintashta-Petrovka type prevailed, which can be ascribed to a similar cultural tradition (complex), however, objects from later occupation levels associated with the Late Bronze Age Srubno-Alakul' culture (complex) were also recovered and analyzed. The results of this study indicate that recovered material artifacts from different stratigraphic levels at the settlement show morphological and functional similarity through time and reflect an important continuity of production and use within these societies.

### **C05.15: Miniature Vessels of the Bronze Age (Sintashta Culture of the Urals, Russia)**

by **Andrey Epimakhov** (*Institute of History and Archaeology, Russian Federation*)

The main purpose of this paper is observation of miniature ceramic vessels as a rare category of artifacts. They are often regarded as result of child activity. Our interpretation of them is based on the ceramic collections of the Bronze Age settlement Kamenny Ambar and synchronous cemetery Kamenny Ambar-5. Contextual and use-wear analysis allowed us to distinguish the particular group of wares, which were not used as vessels. Functionally, they were quite different: the thimble, child-made artifacts and toys. Thus, obtained results not only pay attention to multiformity of ceramic items from the settlements but also they open a new outlook for the archaeology of childhood research because some of them were found in child burials.

The study was supported by grant of RFBR 12-06-91330-NNIO-a.

### **C05.16: Social complexity in the light of new research of the Bronze Age settlements in the Southern Trans-Urals**

by **Ludmila Koryakova** (*Institute of History and Archaeology of RAS, Russian Federation*), **Rudiger Krause** (*Goethe-Universität, Germany*)

Archaeologically, the southern Trans-Urals is characterized by a variety of cultural traditions connected with numerous archaeological sites, among which the sites of the Sintashta and Petrovka cultures hold a major position. It is believed that these cultures are responsible for the innovative development of the region at the end of the Middle Bronze Age. About 21 settlements with closed circular, oval or rectangular fortifications have been discovered within a rather limited territory. After large-scale excavations at the Sintashta and Arkaim cemeteries and settlements, scholarly interest has shifted to the search for sociological models that could explain the unusual nature of these sites. These were regarded as proto-cities, cities, religious and administrative centres, ceremonial or productive centres, trading



posts, and so on. Unfortunately, most of these interpretations have not proven to be well grounded through recent field research. The Sintashta-Petrovka settlement pattern represents a new form of habitation structure, which may well have required new forms of social organization. In view of these archaeological manifestations, scholars have suggested that the Sintashta-Petrovka culture might correspond to the emergence of complex societies associated with pronounced leadership and territorial control. This model will be analysed based on the results of an on-going multidisciplinary project.

## POSTER

### **C05.01-P-4: The Archaeological Artifacts Complex as reflection of intercultural exchange of the Late Bronze Age tribes of the Southern Urals**

by ***Nikolai Shcherbakov*** (Bashkir State Pedagogical University named after M.Akmulla, Russian Federation), ***Iia Shuteleva*** (Bashkir State Pedagogical University named after M.Akmulla, Russian Federation), ***Alexandra Golyeva*** (Russian Academy of Science, Russian Federation), ***Vladimir Lunkov*** (Russian Academy of Science, Russian Federation), ***Ludmila Kraeva*** (Orenburg Pedagogical University, Russian Federation)

The territory of the Southern Urals, including the Urals and Volga regions, considerably differs in an archaeological sense from neighboring regions. The population of the Late Bronze Age was a mixed one, a syncretical carrier of two traditions – Andronovsky and Srubnyay ones. Burial and settlement objects combine mixed cultural traditions of steppe and forest-steppe populations. The main archaeological material is the ceramic complex, discovered at burial and settlement sites. In the process of investigation the complex of sites consists of five contemporaneous settlements – Usmanovo I–III settlements, Muradymovo settlement and 57 Kazburun barrows were examined. During archaeological investigations 7028 sherds were obtained (including 48 entire vessels). For this complex of significant sites the following groups of scientific analyses were applied – radiocarbon dating of ceramics, which showed that it was produced between XVI–XV century BC (N. N. Kovalukh, V. V. Skripkin), technical analysis of ceramic material, paleo-pedological analyses (including raw material for ceramics), metallographic analyses, paleo-zoological analyses and paleo-anthropological analyses. These analyses were performed with the support of RHF № 12-11-02007 a/U. In the contact area of mixture of two groups of Srubnyay and Andronovskay population vessels with marks were recovered (zoomorphic pictograms, complex iconic figures).

## Session C06 Gender in flux

**Saturday, 7 September 2013, 16:30–18:30**

**Room:** UP 108 (Building 2, ground floor)

**Organisers:** *Nancy L. Wicker* (University of Mississippi, USA), *Elisabeth Arwill-Nordbladh* (University of Gothenburg, Sweden) and *Kristin Armstong Oma* (Oslo University, Norway)

Studies of gender in archaeology are experimenting with new ways of theorizing and conceptualizing the role of gender by incorporating different ontologies, epistemologies, theories, and kinds of data sets into the archaeological discourse. The AGE (Archaeology and Gender in Europe) sessions presented at EAA the last couple of years bear testimony to this. A decade ago, several volumes were written that set out a framework and objectives for gender archaeology. Since then, the field has grown considerably and is expanding in several directions.

Gender studies are currently somewhat in flux, and the present willingness to branch out into new fields can potentially lead to new and interesting paths of research. This might include, as archaeological issues, explorations of gender's intersection with hegemonic orders of power like heteronormativity, bodynormativity, androcentrism, racism, social stratification, and human dominance over animals or other subaltern categories. The session seeks to address the future of gender research and its role in the wider archaeological practice, research, and discourse. The aim is to provoke a discussion of where gender studies could and/or should go from here. We welcome both visionary position papers and case studies based on empirical analyses that challenge the fringes of the theme.

The session is organised by members of AGE, a working party of the EAA.

Addendum

(Several researchers who about a decade ago wrote monographs exploring the concept of gender, as well as some who have offered more recent contributions, will be invited to reflect on the development of the field and the future of gender research. In addition, contributions will be encouraged from the EAA membership.)

### **C06.01: Feminist perspectives in action: looking for gender archaeology beyond academia**

by *Paloma Gonzalez-Marcen* (Universitat Autònoma de Barcelona, Spain), *Marina Picazo* (Universitat Pompeu i Fabra, Spain)

In the last decade there has certainly been a significant growth, both qualitative and quantitative, of academic contributions in the field of gender archaeology. However, feminist activism related to archaeology, which is the root of the incorporation of these perspectives in disciplinary research, shows no translation of comparable intensity in the non-academic field.

If we assume that the development of gender archaeology stems from the search for critical and informed representations of gender, and particularly women, in the historical narratives, broadly understood as instruments of knowledge, reflection and action, there is surprisingly little and/or poor visibility of gender perspectives in the field of the so-called public archaeology.

In this paper we intend, first, to reflect on why the journey from feminist activism to gender archaeology seems to have become a one-way one, with few return tickets; secondly, to provide examples and proposals for a higher incidence of gender archaeology in different areas of contemporary society; and, thirdly, to discuss the academic difficulties that activist researchers may encounter for making their actions both visible and relevant.

### **C06.02: Identity configurations with and without gender**

by *Cecilia Lidström Holmberg* (Uppsala University, Sweden)

This paper aims to show that if we start from gender and sexual difference as givens, we miss out what the archaeological record may tell us about past identity formations. It is all too easy to decontextualise, dehistoricize and essentialize identity. Archaeological interpretations, including gender archaeology, continue to presume the existence of a binary sex/gender system and a universal division of labour upon sex. Relational systems of practice however give structure and meaning to the world in historically specific ways and the formation of identity depends on these systems of norms. Doing gender means creating significant differences but differences that are situated, not natural or essential. Based on empirical analyses of archaeological contexts, I argue why gender is relevant to analyses of identity in the Early Neolithic TRB but irrelevant to analyses of Mesolithic identity configurations. Early Neolithic TRB contexts show strong patterns of differentiation possible to see as an institutionalized framework through which gender were made and enacted. Mesolithic hunter-gatherer contexts, by contrast, show no similar emphases on differentiation. Following the idea that practice and identity entail each other; this suggests that gender had little or nothing to do with Mesolithic identity formations.

#### **C06.03: Cross-gender in Bronze and Iron Age in Central Europe? A question of interpretation.**

by [Julia Katharina Koch](#) (*German Archaeological Institute, Germany*)

The discovery in recent decades that we can find different gender minorities in prehistoric societies – and not only in modern societies – is an outcome of reanalysis of gender determinations in archaeology and of serious comparison of physical anthropological and archaeological data. Beyond the main gender groups of women and men, there also exist graves without clear gendered inventories. A large number of these are graves that do not exhibit any gender-typical traits, often because they have too few or atypical grave goods. They form quite a large group but are rarely considered in the reconstruction of social models. The problem is that they are genderless to us but perhaps not to their own society, for instance, if the original gendered object was from organic material. However, this paper will focus on another group with different gender-typical artifacts and traits, the so-called cross gender (i.e. third gender, gender outliers, or queer). So we have to enquire how we can discover such people systematically and with which material and behavior are they connected. The methodological discussion deals with examples from two cemeteries in Bronze Age and Iron Age Central Europe.

#### **C06.04: The Materiality of Combs – Multi-faceted personal items**

by [Corina Wetschei](#) (*Albert-Ludwigs-University Freiburg, Germany*)

Across cultures hair has long held cultural significance as a powerful symbol. In addition the manipulation of hair has been seen as signifying beauty in women and power in men. This paper takes a closer look at Bronze and Iron Age comb finds with the aim of showing that those were far less utilitarian objects associated with the female sphere than they tend to be now. Combs have been valued by both genders alike no matter what material was used for their production. Moreover, comb pendants have also been used by women and men. Most of the pendants represent religious symbolism typical for the Bronze and Iron Age. These so-called amulets should prevent their wearer from any sort of evil and bring fortune to them. Another representation of combs can be found in form of illustrations and petroglyphs. Face urns and clay statuettes validate again that both genders have been depicted with combs. The warrior grave steles demonstrate further that combs had a high priority in the society. Geographically the paper will confine its analysis to different European countries and chronologically it will cover the time period 2000–15 BC.

#### **C06.05: Are Viking Age objects gendered? A case study from Iceland.**

by [Janis Mitchell](#) (*University of Iceland, Iceland*)

Gender is an attribute which can be considered in relation to how identity might be portrayed in burial and in Viking studies people and objects have often been considered definitely gendered as male or female. This paper addresses the question of whether analysis of objects from the osteologically sexed burials of Viking Age Iceland can be used to create a reliable gender model. Here, an attempt will be made to create this model, using statistical analysis of the assemblage in question. The possible outcome may indicate variations, subversions, or blurred gender boundaries but will, however, be used to discuss the appearance of gender in relation to perceptions of death and identity portrayed in death. If successful, the object related gender model can be considered as a practical working model and applied to other regions.

#### **C06.06: A picture is worth a thousand words: Contemporary constructions of Iron Age gender**

by [Jo Zalea Matias](#) (*Durham University, UK*)

Images of the past encapsulated in paintings, statues, or even artists' reconstructions are but one of many ways to explain how people lived in the past. They are both subtle and effective in how they transmit ideas, not only influencing public perceptions of archaeology and the past, but archaeologists themselves. However, contemporary visual aides are often seen as secondary to written texts within academic discourse. Their impact is rarely acknowledged or discussed despite the fact that archaeologists are often driven or influenced by the ideas that are embedded within them. Specific notions of gender are routinely perpetuated through such imagery, instilling conceptions of gender roles in the past within both public and academic consciousness. This paper will examine 19<sup>th</sup> and 20<sup>th</sup> century images of Iron Age Britain reproduced in both academic and popular texts. Recurring themes and motifs will be analyzed to determine what ideas they have perpetuated in regards to gender and social life in later prehistoric Britain – not only to the public, but the academic community as well. In doing so, we can create alternative images and models that better demonstrate the complexity of social lives, particularly in relation to gender, in the past.

## Session C07 Humanity and Creation

Thursday, 5 September 2013, 16:30–18:30

Room: EP 110 (Building 1, ground floor)

**Organisers:** Gail Higginbottom (Australian National University, Australia) and Philip Tonner (University of Glasgow, UK)

This session intends to involve open debate around the possibilities of archaeological interpretation at the fundamental level – that of the theory(ies) of existence and materiality. We invite papers that discuss philosophical notions in a challenging and thought-provoking way and which show us how these notions can be used in interpreting life and ideas in the past. Thus we would like papers that offer conceptual depth where the core concept, and the application thereof, can tell us something about what it is to be human generally as well as to create a defensible contribution to the period it endeavours to understand. Your papers will therefore demonstrate this either through argument alone or by argument and material application.

### C07.01: The sensual and empathetic species

by John C. Barrett (University of Sheffield, UK)

By treating archaeological residues as the products of human behaviour archaeologists appear to be reduced to asserting the behavioural characteristics that define a common humanity. From an archaeological perspective, humanity comes into view as the producer of a particular structural arrangement of residues that supposedly shares the common characteristic of being 'symbolic'. Consequently humanity is taken to be the 'symbolic species' that materially projects (represents) a cognitive awareness onto the world, and human evolution is the product of an evolving brain architecture that houses this developing cognitive mechanism. My argument will be that consciousness does not involve symbolic expression, that all life is conscious, and that humanity is a diverse form of life that evolves via particular sensualities to find various places for itself in the material world. This perspective will be illustrated by questioning the archaeological tendency to analyse social organisations in terms of exchange relationships instead of the ways bodies claim to identify with the seemingly essential qualities of material things.

### C07.02: Human existence, ideas, and materiality: Questions around ontology and epistemology. The case of "agency".

by Torill Christine Lindstrøm (University of Bergen, Norway)

Theories and questions around "existence" and "materiality" are deeply connected to epistemology and ontology, and to profound methodological questions in archaeological research and interpretation. – The concept and phenomenon of "agency" can serve as an example. "Agency" has been suggested, particularly within Symmetrical archaeology, as a concept that can contribute to transcend, and close, "The Big Divide" between nature and things versus culture and people (Latour 1993), a division that haunts both processualism and post-processualism in archaeology, as well as other sciences (Ingold 1988, 2006). Consequently, but also as a tribute to the ontologies of indigenous non-western cultures, "agency" has been suggested as an attribute of things, plants, animals, and humans, alike. – However, I claim that "agency" becomes a logically and scientifically meaningless concept if applied to all phenomena that move or in some other way have effects on its surroundings. Whether these entities have agency, are empirical and epistemological, not constructional or ontological questions. – I will also question Latour's Big Divide which presupposes a unified "western" ontology; and based on "what it is to be human generally" challenge the presumed-to-be great ontological differences between "The West" and "The Rest", and implicitly between "The Past" and "The Present".

### C07.03: Creating order in Iron Age landscapes: a social ontology of boundaries

by Mette Løvschal (Aarhus University, Denmark)

Drawing boundaries is, on the one hand, a very physical phenomenon that characterizes the way humans organize space to make sense of their surroundings. On the other hand, it is also a fundamental conceptual mechanism and a social phenomenon, deeply anchored in concepts of social affiliation, reciprocity, and identity. Gaining a deeper understanding of how the different levels of materialization, conceptualization, and processes of drawing social boundaries become mutually embedded in a long-term perspective provides a possible means of approaching some very basic meaning-making processes in the past.

This paper focuses on how linear, manmade landscape boundaries were inscribed in the landscape in the first millennium BC across Northwest Europe. Early materializations of landscape boundaries demonstrate a significant alignment of past spatial principles and a continuation of already existing, implicit spatial classifications. Over time, the same boundaries became an important catalyst for the transformation of space on a wider scale and a tangible anchor for new social ways of being. The paper demonstrates a case study of how boundaries, as a social ontology, were deeply embedded in time not only in their physical materialization but also in their creation and development as a conceptual and social anchor.

#### **C07.04: Towards *longue durée* archaeology: cultural paradigms and long term structures**

by **Piotr Kalicki** (*Institute of Archaeology, Jagiellonian University, Poland*)

Development of archaeological theory is marked by shift of research focus from the study of general cultural phenomenon to internal dynamics of culture. An important side effect is a tendency to abandon broader cultural research for detailed studies, which leads to balkanization of archaeological theory.

The heart of each culture is worldview i.e. complex system of cognitive and normative schemes, on which is based socio-economic and ideological structure, expressed in the material culture. However, throughout history many cultures with different secondary features developed sharing the same worldview. I propose to call such a basic worldview “cultural paradigm”. Adopted from the methodology of science (Kuhn 1962) this term suits spatiotemporal dynamics of cultural development and fragmentation better than notions of cultural area, civilization or tradition. Moreover, considering that culture is based on the principle of personalism, suggested concept is useful for analyzing internal dynamics of culture.

Worldview is reflected by Braudel’s (1949) *longue durée* structures and therefore may be studied by archaeologists. Nevertheless, as will be demonstrated on the Andean example, our periodization is a reflection of mid-twenty century theoretical development and should be re-conceptualized.

*Research was carried out in project financed by National Science Centre (decision no. DEC-2011/03/N/HS3/01151).*

#### **C07.05: Those who create are made – Heidegger’s world four**

by **Gail Higginbottom** (*The Australian National University, Australia*), **Philip Tonner** (*Hutchesons’ Grammar School, UK*)

The term dwelling, which Heidegger came to employ for *Dasein*’s way of being-in-the-world, belongs mainly to the latter period of his thought. A period when, significantly for our concern with megalithic monuments, he came to elaborate what he called the ‘fourfold’ (*das Geviert*): composed of earth and sky, gods and mortals. For us, however, what is significant is that the fourfold emerges holistically from the event (*Ereignis*) whereby historical communities establish themselves historically, by acts and by material production, as a community. The significance of the fourfold for Heidegger is that each term represents an irreducible dimension of the meaningful world of dwelling. Although Heidegger configured the fourfold in terms of an opposition to modernity’s technological self-understanding (*Gestell*), the fourfold is useful as an interpretive network when dealing with prehistoric communities and their material production.

## Round Table C08

### Orders of knowledge. Disciplinary Powers in the Archaeological Discourse

Friday, 6 September 2013, 16:30–18:30

Room: UP 101 (Building 2, ground floor)

**Organisers:** **Thomas Meier** (University of Heidelberg, Germany), **Karin Reichenbach** (University of Leipzig, Germany) and **Sarah Tarlow** (University of Leicester, UK)

A reflection on academic disciplines as structures, places and orders of power has long been introduced by several authors, most famously by Michel Foucault. These concepts, however, have not yet been intensively applied to the humanities, let alone debated within archaeology/ies. By this Round Table we aim to fuel an overdue discussion about the orders of discourse and the ways they exert disciplinary(-ian) powers.

On a general level we would like to examine the nature of discursive orders. E.g. behind the academic ideal of an archaeology oriented towards science (empiricism, fieldwork, materiality) are hiding anxieties towards the uncertain, the pluralism and multiperspectivity. The Cartesian world-view with its clear-cut dichotomies and its objectification of nature and the other restricts and structures the contents and forms archaeology can be conducted “correctly”. In daily practice it is the institutions and cemented procedures that – as dispositifs in the sense of Foucault – reproduce the disciplinary orders as well as they are determined by these discourses, as e.g. peer-reviewing systems, grant assessment, academic hierarchies, graduate schools and research clusters, heritage legislation etc. Here, discourse orders can be traced revealing the ways actors strategise for belonging to the community of those being “within the true” and thus leading to a mainstreamisation of archaeology. Interacting with intra-disciplinary orders are transdisciplinary orders of discourse, unconsciously or rigidly influencing the former. Political correctness or the commitment of research to civil aims are merely two aspects of claims by politics and society not only restricting the forms of saying, but also the contents of the sayable. Not least this fosters the differentiation into archaeological subdiscourses of universities (producing truths), heritage boards (protecting antiquities) and museums (cost-effectively informing the public) and their multiple institutionalisation.

We look forward to a discussion exploring archaeology's discourses of power in historical depth, but we especially want to focus on today's situation within the discipline.

#### C08.01: The quality of peers – warranting the discourse

by **Thomas Meier** (University of Heidelberg, Germany), **Karin Reichenbach** (Centre for the History and Culture of East Central Europe, Germany)

Widely accepted as a procedure warranting high standards and scientific progress peer reviews' actual influence on the quality of research remains yet unsubstantiated, as the efficiency of this time consuming procedure obscure.

Recently voices start to criticise peer review, not the least, as it is a powerful instrument for maintaining the orders of disciplinary discourse:

- It is based on the assumption of an impartial objective truth. It is questionable why reviewers should be as competent or more competent than the authors.
- (Anonymous) reviewing construes hierarchies and thus counteracts the concept of “peers”. It absolves reviewers from responsibility for their evaluations and abets unfair or incompetent criticism. Simultaneously a quality assessment of reviews is missing – as is a discussion of its necessity.
- In desire/need for publications and grants authors rely on the unperilous, every reviewer would understand and consent to and thus they contribute themselves to a perpetuation of the mainstream cutting off risky and innovative research and repeating what we already know!

Altogether the effects of peer review reproduce dominating discourses, conserve mediocrity and endow it with a halo of high quality, while the unconventional and experimental are silenced.

#### C08.02: Discipline and punish: archaeological mainstreaming by Habilitation

by **Raimund Karl** (Bangor University, UK)

In German speaking countries, the Habilitation serves to constitute a special right beyond the basic right to exert academic freedom enjoyed (at least theoretically) by every citizen. This special right is the freedom to teach at higher education institutions; and that even against one's colleagues's wishes. Introduced at the end of Neoabsolutism, this

fundamental right of citizens with sufficient competence to do so aimed to provide students with the opportunity to hear contrasting academic opinions and perhaps even to prevent them being subjected exclusively to the (often dogmatic) teachings of the mainstream as represented by 'their professor(s)'.

However, since then, this (admirably liberal and enlightened) intention has been subverted and perverted by that very mainstream: after all, the decision on whether someone is sufficiently qualified to exert this special right rests with the professors, who often (may) wish to prevent 'their students' to be subjected to the different, 'dangerous' ideas of others, and particularly of lateral thinkers. As a consequence, the Habilitation has become an instrument to exert academic power: rather than strengthening academic freedom (and thus enabling students to be exposed to differing opinions), it is used to cement those methods and ideas that support, rather than challenge, the mainstream.

### **C08.03: And you relevance is...? Archaeology and the limits of interpretation**

by [Alexandra Ion](#) (University of Bucharest, Romania)

The limits of interpretation for any archaeological endeavour are inextricably linked with what researchers think should/cannot be said about their object of study. This paper intends to explore the discursive and practical structuring of the body within the discipline of Osteoarchaeology. Starting from the case-study of a number of analysis of saints' relics from Romania, where Osteoarchaeology has been called in to provide "scientific evidence" it is my goal to propose a reflective approach to the type of knowledge that Archaeology aims for (what is worth saying, what cannot be said and why). It is my intention to see how the limits of the scientific discourse is configured in a context where two paradigms for producing knowledge (along material evidence) overlap or collide, two ontological perspectives that enforce two epistemological approaches. Such a topic is extremely relevant in the context of re-evaluating the current status of the discipline, which has borrowed extensively interpretative models from the hard sciences or from philosophy, each of them coming with its own understanding of concepts such as evidence, truth, value. In the end, it is my interest to explore what relevance Archaeology thinks its standpoint has, when it comes to understanding a human being.

### **POSTER**

#### **C08.01-P-4: Archaeology as power or "the way we believe we serve better antiquities' protection and archaeology"**

by [Anastasia Sakellariadi](#) (Princeton University, USA)

The Classical past and its remains played a significant role in Greece's quest for independence. Archaeology has thus enjoyed a privileged relationship with political power since the early days of the state (1831) and has developed in a 'national discipline', artefact-centred and structured on temporal divisions (e.g. Prehistoric, Classical, Byzantine), evident in legislative premises, administrative structures, museums' management and university curricula. The state archaeological service, the exclusive responsible for the protection of antiquities in Greece since 1834 constitutes the core of this system.

However, fulfilment of the national project has rendered the ideological basis of archaeological protection irrelevant. Current political stakes, (e.g. reducing the state, economic development and environmental policies), as well as reflexive and inclusive archaeologies promoted internationally are perceived by state archaeologists as threats for antiquities and hence the state archaeological service itself. This paper will focus on the archaeological management sub-discourse of the state archaeological service. It will discuss, through discourse analysis of in-depth interviews with state archaeologists, the ways archaeologists perceive their role in relation to national ideology, political powers and society and how they employ a neutralised language to conceal their own power, thus preventing a more reflexive, multi-vocal and inclusive approach to the past, antiquities and archaeology.

## Session C09

### Stuff or words? The interdisciplinary study of Medieval Material Culture, a theoretical debate

Friday, 6 September 2013, 14:00–18:30

Room: EU 104 (Building 1, ground floor)

**Organisers:** Dries Tys (Brussels Free University VUB, Belgium) and Russell Ó Riagáin (University of Cambridge, UK)

Medieval archaeology is a full-fledged sub-discipline of archaeology with everything this entails in terms of its modus operandi, object(s) of investigation, methodology and the development of its epistemological underpinning. While there is little to differentiate it from mainstream archaeology as a whole in terms of its general theory and methodology, one salient point of divergence does exist: the existence of readily available written sources of information. This situates the discipline as part of the broader field of Medieval Studies, a field where medieval archaeology has for much of its history been subservient to investigatory agendas and interpretative contexts set by textual specialists. In the past, this has often, but not exclusively, militated against the large scale usage of the theoretical developments elsewhere in archaeology.

However, the situation has changed significantly in recent decades, and today medieval archaeology and medieval historiography are seen as complementary in the study of medieval social practices. The artefacts studied in medieval archaeology are not mere reflections of history but are active and even interactive forms of material culture that can only be understood by an integrated contextual approach, fully utilizing the benefits offered from other categories.

It is hoped that this session will contribute towards the development of good practices and rethinking of conceptual frameworks within medieval archaeology. It is also intended to contribute towards a thorough social understanding of medieval society through an open, critical interdisciplinary view of sources of information, independent from the preconceptions of traditional historiography, by facilitating the comparison and discussion of the use the full range, or conversely, lack, of contemporary theoretical and interdisciplinary approaches in medieval archaeology.

Papers are encouraged from a wide range of theoretical approaches across the interpretive spectrum searching for symbolic markers, social spaces, social fabrics and ideological practices; without limitations on the artefacts or topics.

#### **C09.01: Historical archaeology's Calimero complex: where does it come from and how do we fix it?**

by Roos van Oosten (Leiden University, The Netherlands)

It is no exaggeration to state that the sub-discipline of historical (urban) archaeology suffers from what could be called a Calimero complex. The term is derived from the cartoon chicken who feels he's not taken seriously on account of his size and is affirming his position of underdog. Again and again, we apparently feel compelled to question whether or not we as a field have a right to exist. During their interaction with the public and in local archaeological research agenda's this Calimero complex all too frequently results in historical archaeologists putting forward a variation on a famous quote by historian Peter Sawyer from the mid-seventies "archaeology is a very expensive way of telling what we already know". One can wonder whether such statements are not at risk of becoming self-fulfilling prophecies. Any stick will do to beat the dog, but we would do best to leave such considerations behind.

The problem is that according to pre-historians historical archaeology does not incorporate enough theory while at the same time it refers to historical sources far too infrequently to appease historians. However, David Clarke's 'archaeological manifesto' ('archaeology is archaeology is archaeology') can only cure the symptoms.

#### **C09.02: Making networks in the mind: craftsmanship and the role of habit in an archaeology of the self**

by Ben Cartwright (Cambridge University, UK)

Making mentalities: the use of multiple strands of evidence in Medieval archaeology has been both a blessing and a curse in the development and application of social theory. Much of this imbalance seems to be based in a desire to create the 'what' of past thought, rather than 'how' mindscapes were created. This paper will approach the learning of 'ways of being' as unique skill sets that had to be taken on as habit. And will use recent developments in the sociology of craftsmanship as a spring board into a new methodology for investigating the production of 'self' over time.

Using the example of textile production I argue that the repetitive learning of skill effects how people think. Rhythms of thought, evocation, daydreaming -as a point of integration and networking that situates practitioner within a social tradition; innovation and transgression could be achievable goals of archaeological research in the quest to reconstruct past lives in a variety of contexts from spheres of production, landscape interaction, urbanism, to childhood, church and home. A refocusing on making mentalities, the how, where, when, allows for a far richer/fuzzier/more colourful understanding of the ways in which people 'make sense' of the worlds they inhabit.



### **C09.03: Integrating written sources and materiality in the study of medieval villages in the Cantabrian Mountains (North of Spain)**

by **Margarita Fernández Mier** (*Universidad de León, Spain*), **David González Álvarez** (*Universidad Complutense de Madrid, Spain*)

The integration of different types of information given by materiality and written sources has been extensively discussed in Medieval Archaeology. Some scholars have pointed out the need of managing and interpreting historical data obtained from both approaches preserving their independence. However, it is clear that Medieval Archaeology cannot set up historical narratives in complete isolation from written sources. It is necessary to select accurate questions to each type of data sets, following to an integrated research perspective. This paper presents preliminary results from our research carried out in the Western Cantabrian Mountains (North of Spain). Aiming to reinforce our understanding of the agrarian landscape around medieval villages such as Vigaña (Asturias, Spain), both materiality and written sources have been examined from an integrated project. Our interdisciplinary approach has involved the study of toponymy, ethnoarchaeological research, archaeological surveying and excavations, palaeoecological studies, and the lecture of medieval and modern written sources. Finally, we assess the significance of applying these diverse approaches. Furthermore, the case study used has offered several contradictions between the different sources used. Thus, it is important for historians and archaeologists to be more critical with the data nature and their potentialities, especially with the interpretation process.

### **C09.04: Deserted medieval settlements in Bohemia, 1300–1500 A.D.**

by **Tomáš Klír** (*Charles University in Prague, Czech Republic*)

The paper discusses the benefits of written sources for the testing of conventional archaeological interpretation. Two examples are presented and questioned. Firstly, a contextual social-economic interpretation of the layouts of deserted villages. Secondly, the resiliency of two rural communities in very different geographical and social-economic context.

### **C09.05: Power and Landscape: Society, Identity and Long-Term Change in Medieval Livonia**

by **Andris Sne** (*Faculty of History and Philosophy of the University of Latvia, Latvia*)

The Age of the Crusades of 'long 13<sup>th</sup> century' brought new forms of life and created new shape of social, political, economical and cultural structures in the eastern coast of the Baltic Sea (medieval Livonia). The paper attempts to look at relations between power and landscape in Livonia (13<sup>th</sup> – early 16<sup>th</sup> centuries) on the basis of both archaeological evidence and written sources. Both kinds of sources shall be used in combined way with the critical reading of the ideologically orientated medieval texts. The emerging Livonia became one of the frontier zones of medieval Christendom as a region where different cultures mutually interacted. The newly established medieval power structures partly replaced, partly co-existed with the previous prehistoric chiefdoms' structures for several centuries. The changing political circumstances had left their traces in the landscape, too, introducing there several new elements thus gradually restructuring social organisation of space and changing the network of power centres. Rural landscape encapsulated marks of identity and collective (social) memory of native societies for some centuries until agrarian expansion of manors started in the Early Modern Age so the native societies and their identities were transformed due to the expansion of medieval power structures into the landscape.

### **C09.06: Material ties: migration, diaspora and material culture in the late medieval Baltic**

by **Magdalena Naum** (*Lund University, Sweden*)

The Medieval Baltic Sea was a stage for considerable migration. These movements, whether caused by scarcity of land, conflicts or economic opportunities had transformative, cultural and social consequences for both the immigrants and the host communities. They meant breaking with the routines of everyday life, entering a new social and cultural environment and elaborating new definitions of self and the community.

While medieval scribes mentioned or described the causes and routes of migration they rarely dwelled upon the experiences and dilemmas of immigrants. Theoretically informed archaeology can pick up these important threads and contribute to a better understanding of the cultural responses to translocation. In this paper I will connect recent scholarship on diaspora and displacement with the theories of human-object agency advocated in anthropology and archaeology to discuss the ambiguous position of immigrants and the way material culture figured in the immigrants' experiences of movement. Discussing Hanseatic diasporas in Kalmar (Sweden) and Tallinn (Estonia) and Slavic migration to Denmark I will explore material practices of migrants, paying particular attention to the symbolic and emotional value of material culture in forging connections, bonds, and a sense of place in the social landscape of translocation.

### **C09.07: The Past as a Power Resource: Origin Legends, Legitimation Narratives and their Critique, Archaeological and Otherwise**

by Russell Ó Riaquáin (*University of Cambridge, UK*)

The transformation of the past into narratives – historical, archaeological or otherwise – has never been without bias. Narratives always have target audiences, both contemporary and future. Their producers, ourselves included, have never spent their lives in some form of value free form of suspended animation, isolated from personal history and experience. Any critique has been hampered by the fragmentary nature of the contemporary academy, where the social whole is studied through the prism of an ever-increasing number of specialisms.

This paper focuses on how textual narratives based on the medieval past and its material remains have been used to legitimate both the existence of socio-political configurations both ancient and modern, and the unequal distribution of social power within them. To do so, evidence from material associated with Ireland and Scotland – regions characterised by their dynamically shifting positions in power networks, colonial and otherwise – will be utilised in the conducting of a multidisciplinary critique, drawing on approaches from literary theory, contemporary historiography, social theory and a rigorous use of the archaeological evidence. The potential pitfalls of universalism, essentialism, de-contextualisation and teleology will hopefully be avoided by identifying the associated discipline-specific debates of each approach and taking them into consideration throughout.

### **C09.08: Archaeology of buildings in Italy. An epistemological essay on the study of the “multi-stratified” meanings of medieval buildings.**

by Alice Vanetti (*University of Neuchâtel, Switzerland*)

Archaeology of buildings was born in Italy in the seventies of the twentieth century as a research approach of Medieval Archaeology to the historical building. Sharing the instances of History of Material Culture promoted by the *Ecole des Annales*, it develops from the very beginning its own methods and ambitions. This is essentially due to the intimate multi-stratified nature of the Historical building, as a physical object whose structure is the result of a long-term process of subsequent interventions, and as such comparable to the stratification of archaeological sites and emblem of a plurality of meanings – technical, ideological, social, economic – of past societies whose reconstruction is the goal of History.

The purpose of this work is to delineate the epistemological development of Archaeology of buildings in Italy from a technical method of Medieval Archaeology to a discipline that encompasses the comprehension of socio-cultural aspects of past societies in a “World History” perspective. In particular, the focus is on the approach of Archaeology of buildings to the Monument as object of knowledge. As such, its discernment implies the confrontation with other disciplines such as history, architecture and restoration.

## **POSTER**

### **C09.01-P-4: The Benedictine Monastery of St. Margaret in Bijela (Croatia): Between written sources and archaeological research**

by Andrej Janež (*Croatian Conservation Institute, Croatia*)

At the end of the Middle Ages, the Benedictine Monastery of St. Margaret, on the western slopes of Papuk, was one of the order's most important centres in medieval Slavonia. Although the exact date of construction of the monastic complex is still unknown, Bijela Monastery has the best recorded history. The number of known documents mentioning the Monastery (10 in the 14th century) increases significantly in the 15th and 16th century (to a total of 70).

Archaeological research has been carried out in the southern part of the entrance complex to the monastery church, the so-called *empora*. Many architectural mouldings of windows and doors connecting the *empora* and the nave have been found, belonging to the end of 14th and beginning 15th century.

The mentioning of the Monastery's ruinous state and the fact that Bishop Ivan Alben bequeathed money for its repairs leads us to believe that the discovered architectural elements date to the church restoration phase in the first quarter of the 15th century. These short surveys can link site stratigraphy and stylistic features of findings with written sources as well as highlight architectural restoration as part of the activities of one monastic community in late mediaeval Slavonia.

## Session C10

### Transfer of Knowledge in Archaeology

Saturday, 7 September 2013, 08:30–13:00

Room: UU 307 (Building 2, 3rd floor)

Organisers: **Staša Babić** (University of Belgrade, Serbia) and **Raimund Karl** (University of Bangor, UK)

From the inception of archaeology as an academic discipline up to the present, many of its basic assumptions and concepts have been introduced from other fields of research, ranging from humanities to natural sciences. These transfers of ideas have decisively influenced the main directions of research and have caused periodical massive changes, sometimes described as paradigm shifts. However, more often than not, in the process of transfer from one setting to the other, the original ideas were adapted for the purposes of different disciplinary requirements. At the same time, these modified concepts gained the value of indisputable truisms, not to be tested, but additionally petrified by archaeologists. The result is a string of widely held beliefs, both in scholarly and general public, about the functioning of the human society.

On the other hand, these fundamental events have been taking place mainly in the academic settings of Western Europe, reaching other parts of the archaeological community with significant delays. Furthermore, this second round of knowledge transfer has induced additional distortions of the original concepts, in order to meet the demands of the different cultural and intellectual traditions and the present context. The session seeks to explore these processes of knowledge transfer operating between archaeology and other fields of inquiry, and the subsequent reception of thus conceived concepts in various academic settings inside the discipline itself. The aim is to approach the vital question of the mechanisms of construction of archaeological knowledge by investigating the processes of inter/intra-disciplinary exchanges of concepts and the adaptations taking place along the way.

#### **C10.01: Fundamental concepts in 'geographical archaeology' in Central Europe in historical perspective (1850–1970)**

by **Predrag Novakovic** (University of Ljubljana, Slovenia)

The impact of geography in early decades of the archaeological discipline has rarely been subject to systematic historical reflection. This occurred only at the occasions when major geographical paradigms or concepts became introduced in archaeology (e.g. D. Clarke's 'Spatial archaeology' or, recently, the introduction of phenomenological geography in landscape archaeology). cursory glance at the developments in spatial and landscape studies in the European context would probably give impression that the major geographical achievements were applied mostly in Anglo-American archaeology in the post-WW2 period (e.g. eco-systemic paradigm, settlement archaeology, economic geography, re-discovery of the Vidal de la Blachean/Braudelian 'geographie humaine', GIS, cultural and phenomenological geography...). While we do not want to disavow these achievements, such a view, nevertheless, overlooks some important geographical traditions in Central European archaeology of the early 20th century which at that time not only represented one of the summits of the archaeological thought, but also contributed some genuine theoretical reflections on the future development of the archaeological discipline. In the paper the influence of some early leading geographers and scholars (e.g. A. Humboldt, K. Ritter, F. Ratzel, P. Vidal de la Blache, A. Hettner....) on shaping Central European archaeology will be discussed.

#### **C10.02: To observe and define is to know**

by **Raimund Karl** (Bangor University, UK)

When prehistory emerged as an academic discipline in German-speaking Central Europe, positivism was the dominant epistemological approach. Prominent scientists like Ernst Mach and influential anthropologists like Rudolf Virchow had established positivism as the approach to academic inquiry. Their views influenced the 'founding fathers' of prehistory; perhaps most obviously so Moriz Hoernes.

The 'early prehistorian adopters' stripped it of much of its logical foundations and transformed it into 'the method' of 'German' prehistory: any inquiry necessarily proceeds from observation, observations are turned by classificatory descriptions into definitions which form primary premises for inductive reasoning; 'completeness' of observations before any explanation may be attempted as a requirement; and the need for scholars to be seen as detached, 'objective', observers.

This 'method' has since been passed on uncritically as the essential, 'skill of the craft'; taught by example, and learnt by repetitive imitation. It has become part of the archaeological habitus; something that no longer is, let alone needs to be, explicitly expressed and discussed, but that is simply part of 'normalised' archaeologists' behaviour. It has become

so 'obvious' that any attempt at questioning is met, at best, with incomprehension, at worst by accusations of failure to understand the basic fundamentals of prehistoric archaeology.

#### **C10.03: Kossinna's thought and Romanian archaeology**

by Alexandra Ghenghea (Institute of Archaeology "Vasile Parvan", Romania)

During the last century Romanian archaeology shared many ideas from German school of archaeology and developed them in its own way. Most of the Romanian archaeological theories during the 20<sup>th</sup> century are rooted in the Kossinna's *Siedlungsarchäologie*. These particular promoted approaches and their development by local scholars became the synonymous in our scientific environment of German archaeology. I believe the case of Romanian archaeology may be explained using L. Fleck's and T. Kuhn's perspectives in the making of a mainstream scientific theory. However, while in Romanian archaeology little diversity occurred, since then the German "schools" of archaeology have changed a lot. How can we further explain this generalized belief which is not even questioned? This contribution will try to find out how this prior understanding was formed and why Romanian archaeology has not embraced more thorough theories.

#### **C10.04: Escape from Prehistory: Miloje Vasić and Art History in Serbian Archaeology**

by Aleksandar Palavestra (University of Belgrade, Faculty of Philosophy, Serbia)

One of the founders of archaeology in Serbia, Miloje Vasić (1869–1956) was educated in Munich, as a classical archaeologist under the supervision of Adolf Furtwängler. Upon his return to Serbia, Miloje Vasić started his work in prehistoric archaeology. As early as in 1906, Vasić almost abandons the correspondence to the current ideas of the European prehistory, and was not at all affected by culture-historical archaeology. On the contrary, he was convinced that the prehistory of the Danube valley in Serbia was in fact the emanation of the Aegean Bronze Age, and of the Archaic Greek culture introduced by Greek colonists. Due to his indisputable dominance over the discipline in Serbia throughout almost half of the century, culture-historical archaeology paradigm arrived to these parts with the delay of several decades. The issue will be discussed whether Vasić's turn to the method of stylistic, art historical analysis (*Kunstgeschichte*), as opposed to the culture-historical method (*Kulturgeschichte*), caused his bizarre interpretation of the prehistory of the Danube valley in the Aegean and Greek light? Or the other way round – did his obsession with the Aegean and Greece dictate his choice of the method?

#### **C10.05: Processes of knowledge transfer between Serbian and Slovenian archaeology**

by Monika Milosavljević (Faculty of Philosophy, University of Belgrade, Serbia)

The paper focuses on the intercrossing of different knowledge transfer levels using the relation between the Serbian and Slovenian archaeology as an example. The transfer is observed against various criteria, such as: the accumulation of knowledge by its transfer from one generation of scholars to another, the transfer from dominant archaeological communities and appropriation by the marginal ones, the transfer from one discipline to another, etc. Considering the complexity of these two traditions within the broader Yugoslav and post-Yugoslav contexts, the knowledge construction processes will be observed at three breakpoints (after WWI, after WWII and after the disintegration of the SFRY).

The great founders who contributed to the involvement of these Balkan archaeological communities in the contemporary international trends were the prominent authorities. On the other hand, various political circumstances during the 20<sup>th</sup> century and individual professional aspirations made a crucial impact on determining the methods of implementation of the new knowledge and setting of interpretative boundaries in the Yugoslav archaeologies. For this reason, the boundaries and differences acted as the stimulator of the constant exchange of people and ideas between the Serbian and Slovenian archaeologies.

#### **C10.06: (D)evolutive Crossing Over: Classical Historiography and Archaeology of the 'Central Balkan Tribes'**

by Vladimir Mihajlović (Faculty of Philosophy, University of Novi Sad, Serbia)

Transfer of knowledge about the ancient past means gradual reducing of actual quality and quantity of evidence, no matter if we are talking about transmission via historical or archaeological means. As we deal with sorts of data that are indirectly transmitted, the initial knowledge is unavoidably diminished to a specific small scale version of a 'real' picture. These types of insights are then mingled with modern understandings that equip contemporary auditorium with better comprehension of temporally, socially and spatially distant phenomena in a way that makes them clearer and

closer to our own perceptions of the world. Simultaneously, this interplay removes the ancient knowledge even further from its initial forms and meanings, and transforms its role to suit the present contexts and needs. The transformations include several phases of reduction, reinterpretation, re-contextualization, and provision of new meanings with each of the transfers. My intention is to address these problems by using the case study of so called 'Paleobalkan tribes', the notion of historiographically constructed knowledge based on ancient texts, which is used in archaeology to give the voice and meaning to the objects that were made and used in Iron Age Central Balkans.

#### **C10.07: What's in the name? Real 'diaspora' versus constructed 'the archaeology of diaspora'**

by **Tatiana Ivleva** (Leiden University, The Netherlands)

In the last decade archaeology embraced the anthropological and sociological concept 'diaspora', although it is sometimes used as a substitute and a synonym for 'migration'. However, the terms themselves and the processes they describe are diametrically opposed. From the sociological and anthropological perspectives a diaspora is a much more complex process than migration, because diasporic communities are not absorbed into a new home upon settling in a new territory in contrast to migrant groups. It appears that within archaeology such perspectives are not taken up to their value and that if one wants to call a group of people 'a diaspora', one simply needs to tick boxes of diasporic features and make sure that the group is fitted into the definition. The paper suggests that the archaeology of diaspora became a substitute for the archaeology of migration, because it is still considered to be a problematic discipline, due to the discussed on many occasions the negative effects of the theory of migration on explanations of cultural change in the material record. The presentation discusses the dangers of using both terms as synonyms highlighting along the way the pitfalls an archaeologist might acquire while taking a path of 'searching for diaspora'.

#### **C10.08: Post-colonial theory and Roman studies**

by **Richard Hingley** (Durham University, UK)

This paper addresses the introduction of theory to Roman archaeology from 1990 to today. It addresses the broad debate about theory and classical archaeology and addresses the adoption of explicitly 'post-colonial' approach to the archaeology of the Roman empire. It explores the ways in which certain 'post-colonial' approaches (drawn from literary theory, cultural studies and anthropology) were adapted for use in archaeology by scholars in the UK (including works by Jane Webster, David Mattingly and Peter van Dommelen) and the context of this work with regard to the broader debate about theory in Roman studies. It will also explore the context of transforming academic agendas and also the influence of Post Colonial Roman Archaeologies on archaeological traditions of study in a number of countries, including Brazil, Spain, the USA and Serbia and the resistance to these theories in other countries. It is suggested that the process of inter/intra-disciplinary exchange across the globe is complex and that the comprehension of changing academic traditions of study requires that we pay detailed attention to the historical, political and cultural context in which each act of appropriation occurs.

#### **C10.09: Constructing bad old times and the unintended effects of interdisciplinary knowledge transfer**

by **Thomas Meier** (University of Heidelberg, Germany)

The darkness of the middle ages has been reproduced by historians repeatedly till the 1980s. It was received by archaeologists and palaeoanthropologists where it became paradigmatic in the research of medieval skeletal populations. While history – and archaeology in its wake – has partly changed its view in recent years towards a blooming medieval period the bad-old-times-narrative is kept alive by anthropologists on basis of what seems to be objective data.

This case study is exemplarily telling on the modes and problems of interdisciplinarity:

- Knowledge transfer often is subject to considerable time-lag.
- Being aware of the weaknesses of one's own discipline a secure point is expected in neighbouring disciplines – and produced by unreflected reception of arbitrarily selected publications.
- The discursive character of producing data and the narratological character of their interpretation is mostly neglected.
- In connecting knowledge from different disciplines temporal and spatial coincidence of results from different sources is not enough to refer on causal connections.
- A coherent theory of interdisciplinarity is missing.

The paper seeks to rise awareness for some pitfalls of interdisciplinary knowledge-transfer and points to some caveats for a more profound intellectual cooperation.

**C10.10: Landscape research. Deriving from the past – facing the future. Knowledge transfers in practice.**

by *Urszula Bugaj* (Polish Academy of Sciences, Poland)

The contemporary and historical relationships between humanistic disciplines that rely heavily on fieldwork have been the subjects of critical reflection in recent years. However, these reflections have yet to lead to a thorough reformulation of fieldwork methodologies.

The conception of cultural landscape has been used as a meeting point for the various disciplines within humanities. Landscape only exists through cultural encounters that are unique and non-transferable. It includes both the concepts of vision and perception. Landscape research in recent decades is evolving into a set of interlinked and symbiotic disciplines that transcends traditional academic distinctions. Thus enriched, landscape research can offer itself as a fundamental, integrated research field for studying perceptions as well as materiality.

I would like to present the theoretical stance on a “case study” in Montenegro – a humanities-driven and field-based project developed in Dinoša, obš. Tuzi. Our principal aim is to create and implement new field strategies through integration of archaeological, ethnographic and sociological field methodologies. We wish to add a new dimension of understanding to the ongoing process of cultural encounters and to contribute to social theory regarding ideas of how the past affects the present and how the present affects the past.

**C10.11: Village formation and settlement historic paradigms in South Scandinavia 200-1200 AD.**

by *Jesper Hansen* (Odense City Museums, Denmark)

This paper focuses on the formation of paradigms connected to the foundation of the still existing South Scandinavian villages in the late Iron Age – early Middle Age (200-1200 AD). It’s a research area which throughout the last 100 years has been evolved by a number of different academic disciplines primarily historians, philologists, culture geographers and archaeologists. Concurrently with methodological innovations during the 1960’s and 1970’s the accessible archaeological data changed dramatically in terms as volume and character. As a consequence a regular shift of paradigm took place around 1980 within the related South Scandinavian research environment. The shift in paradigm obviously had a massive impact on research environments and interdisciplinary projects and still today makes out a more or less undisputed paradigm.

Throughout the last 30 years the amount of archaeological data seems to have exploded. In spite of this a number of fundamental questions still stands almost unaffected of the last 100 years of research – in particular the question of the apparent missing settlements from 600-900 AD. The question is therefore whether we within the existing paradigm can find the answers of the still standing scientific challenges?

## D: Public Archaeology

### Session D01

#### Archaeological Sites as Space for Modern Spiritual Practice

Friday, 6 September 2013, 16:30–18:30

Room: UU 407 (Building 2, 4th floor)

**Organisers:** Raimund Karl (Bangor University, UK), Jutta Leskovar (Oberösterreichisches Landesmuseum, Austria) and Doreen Mölders (Universität Leipzig, Germany)

Archaeological sites, objects, and texts produced by professional archaeologists are used by a variety of modern spiritual phenomena, such as neopaganism, modern shamanism, goddess spirituality and others in the production of their own belief systems, frequently using archaeology as the 'real-world' basis of their arguments. This session aims on collecting scholarly views about those phenomena from as many different European regions/countries as possible, to get an overview of one of the most direct and influential appropriations of archaeology in the present. The groups holding such beliefs frequently lay claim to ownership or at least usage rights regarding archaeological sites and objects, which they claim as holy places or relics of their own religious (or other) beliefs; and thus (can) come into direct contact – and sometimes conflict – with professional archaeologists (and their plans for these sites and objects and their interpretation). Importantly, this segment of the public is quite influential receiving more and more attention by both journalism and the tourism industry, and thus is able to exert increasing influence on perceptions of the past held by the general public.

European archaeology should be aware of the different kinds of these modern phenomena, and examine what is driving those who follow such belief systems to search for 'confirmation' of their beliefs in (most often) the long distant past, as well as appropriating that past, its places and its objects for their own goals and purposes. Differences and similarities among the various strands of the phenomenon shall be explored, and strategies to deal with such beliefs and believers as professional archaeologists will be discussed.

#### **D01.01: Flowers on Merlin's Tomb. Heritage management and neopagan practices on archaeological sites in Brittany (France)**

by *Gadea Cabanillas de la Torre* (Universidad Autónoma de Madrid / Ecole Normale Supérieure, France)

This paper deals with the issues raised by the use of archaeological sites in Brittany – focussing on prehistoric examples – as neopagan spiritual spaces and the underlying perception of archaeological heritage and information. Our aim is to approach a global understanding of the problem by taking into account the perception and the impact of these activities among believers, whether organised or not, public authorities, the general public and of course archaeologists. First, a review of the basis for the use of archaeological sites for spiritual practices is presented, according to arguments provided by local neopagan believers. Then, an overview of the ritual and non-ritual activities carried out by different neopagan actors on archaeological sites leads to the presentation of specific regional examples raising key issues on heritage management, the attitude of public authorities and their policies. Finally, we discuss the interactions between neopagan activities and discourse and the production and circulation of archaeological information in order to analyse the possible roles played by archaeologists. The symbolic appropriation of archaeological heritage by neopagans is thus placed in the wider debate of our own responsibilities in the public dimension of archaeology especially regarding religious responses to our objects of study.

#### **D01.02: Winter solstice at the sun observatory – The gap between inviting neopagans to archaeological sites and disliking their presence**

by *Reena Perschke* (Ludwig-Maximilians-Universität, Germany)

With the revival of paganism alleged prehistoric cult places are reclaimed as places of worship by different neopagan or feminist groups.

The reaction of the scientific community is divided: some loud voices are raised who want to protect the monuments from "esoterics" in general, but otherwise some museums and local monument authorities directly propagate the idea of cult places in order to attract tourists. The thin line between public performances in open air museums, meetings of reenactment groups and religious motivated gatherings at "authentic sites" dissolves itself when official institutions invite the public to events like "Easter egg hunting in the sacrificial bog of Oberdorla" or "Torchlight procession to the sun observatory" at the winter solstice in Goseck.

Some questions remain: who owns the prerogative of interpretation concerning archaeological sites? Do neopagan rituals represent the legal right to the free exercise of religion?

Presenting two sites as examples, the Galloroman temple site at Görresburg and the “Dolmen Goddess” of Lange-Neichstätt, it will be discussed whether different neopagan practices just damage the monuments, if they remain unharmed or if there could be an appropriate way with an active civic participation that protects archaeological sites e.g. by cleaning them from touristic garbage.

### **D01.03: Contemporary engagements with archaeological sites: a case study of Ślęza Mountain**

by Michał Pawleta (Adam Mickiewicz University, Poland)

Ślęza Mountain is an iconic site in Poland. Surrounded by numerous legends and enmeshed in local folklore, it has been an important site for tourists for many years and the subject of interest for scientists. The slopes and peak of the mountain are surrounded by mysterious stone circles, and equally mysterious stone sculptures have been found nearby. It is generally assumed that Ślęza was an important cult and religious pagan centre in the past.

Although Ślęza has been the topic of many studies and scientific investigations, interest in this unusual mountain goes well beyond scientific discourse. Many people believe that it is a place of particular power, neo-pagans congregate in the surrounding area to celebrate pre-Christian rituals, and those who believe in extra-terrestrial civilisations view the mountain as an ideal landing site for UFOs. Thus, this presentation focuses on contemporary significance of Ślęza, with specific attention to the various functions that it fulfils today. By revealing the breadth of discourses on Ślęza and highlighting its vitality and relevance in the lives of many people, I will attempt to define the relationship that people in the present-day have with the past.

### **D01.04: Using historic places in modern pagan context – practical rituals at historic and prehistoric places**

by Ulrike J. Schepp (private practitioner, Germany)

At sacred wells and Neolithic marker stones, at Gallo-Roman matronae sites and Celtic hill forts, lots of ancient places are used today for neo-pagan ritual practices in reconstructionist and eclectic religions. What drives people practising religion towards old places? This is a glimpse from the practitioners point of view, from private offerings and more public rituals. How is the place found or selected, how is it prepared and how is pagan “ecumenical” practice during a ritual with participants of different pagan beliefs like Celtic Reconstructionists (CR), Asatú, Wicca, shamans and others?

A very small insight to things, happening on heritage sites, near excavation sites and other sites of historical context, unrecognised for a long time by the scientific community but for many people a heartfelt wish like other peoples visiting and practising religion in Christian churches, Islamic mosques or Buddhistic temples to seek a connection to their gods and goddesses, to pray and to make sacrifices.



## Session D02

### Archaeology meets modern art: artists' approaches to prehistoric data

Friday, 6 September 2013, 14:00–18:30

Room: EP 206 (Building 1, 1st floor)

**Organisers:** **Estella Weiss-Krejci** (Austrian Academy of Sciences, Austria), **Edeltraud Aspöck** (Austrian Academy of Sciences, Austria) and **Mark Anthony Hall** (Perth Museum & Art Gallery, UK)

Modern artists' interpretations of archaeological data are one way of how archaeology frequently presents itself to the public. The recreation and reinterpretation of ancient objects, e.g. by Chinese artist Ai Weiwei and video artist Sharon Lockhart, or documentaries such as Werner Herzog's *Cave of Forgotten Dreams*, constitute subjective and sensual approaches to prehistoric peoples' objects and mindscapes. Usually in such projects, what we call archaeological context and scientific method play a subordinate role and are secondary to a creative engagement with the past in the present.

The goal of this session is to invite presentations to form a selection of modern art projects relating to and using archaeology. These art projects bring to the fore a number of intriguing questions to the discipline of archaeology. First and foremost, in archaeological research we use the data aiming to reconstruct and understand the past – what do artistic interpretations of archaeological material aspire to? Is there a dividing line between artistic and archaeological interpretations of archaeological data – and how is it defined? While papers concerning archaeological research have a rather small audience, artistic interpretations of the past, together with exhibitions and popular science articles often reach a far greater audience and exert a far greater influence on the public. How can we as archaeologists deal with the materiality of the past in the present in such a format? Which types of artistic approaches exist and what role does the archaeological context play in the artworks? In what way are such approaches to the past relevant to our field and what can archaeology gain from such interactions?

#### **D02.01: The art of the past: Before and after archaeology**

by **Ian Alden Russell** (*Brown University, USA*)

With intellectual and disciplinary roots in art history, early modern science, and antiquarianism, archaeology exists within the arts, humanities, and sciences. As with their antiquarian forebears whose work to compose images of the past slipped easily between art to science, contemporary archaeologists compose pasts from traces, residues, absences, and presences appropriating, mixing, and inventing techniques and methods from across the academy. In recent years, there has been a resurgence of interest in the composition of the past within contemporary arts practice. Some archaeologists endeavor to meet this interest within the arts, sustaining critical, interdisciplinary work on the renewal of the past through both archaeological as well as artistic practices. Collectively, there is evidence of a concerted effort within both archaeology and art to address the composition of the past—not as an end result of technological analysis but as the beginning of a possibility for renewal through process. Doing away with the rubric of a scientifically managed past, perhaps we may be witnessing a revival of an avant-gardist past, akin to the predisciplinary spirit of antiquarianism, that is not confined by disciplinary strictures or epistemic conventions, where the past is not a destination but a continual process of composition and renewal.

#### **D02.02: Art-chaology: Augmenting the archaeological record with art**

by **Dragos Gheorghiu** (*National University of Arts, Romania*)

Art-chaology is an alternative experimental archaeology that uses art as an allegoric instrument for evocation, in order to sensitize the archaeologist [and the public] to reinterpret material culture following a phenomenological experimentation. One advantage the use of art provides is its potential to approach vague concepts, which cannot be addressed by science, such as space, landscape, ritual, or ceremony.

This paper will present an art-chaological experiment which consisted of the transformation of a whole site into a gigantic map, where the archaeological Points of Interest (POI) were marked by works of art (like installations, i.e. allegories or metaphors) to evoke different features of each POI. The use of allegories creates an augmentation of the reality of the POI-s and an analogous visual discourse, which can be used to materialize invisible cultural features like rituals, for example.

The experientiality of some rites of passage materialised with art allegories will be discussed as well as their influence on the imagination of the experimenters. For archaeology at large, the art approach could create an artificial product which is *analogous* and not *similar* to the past reality, but, which could powerfully evoke this reality.

### **D02.03: Visualising the past: The Schoeppingen time-machine project as an example for the collaboration of archaeology and visual art**

by **Sebastian Walter** (*Art Foundation Schoeppingen, Germany*)

According to Colin Renfrew, a central question for both, archaeologists and artists is “where do we come from?”. Yet, what are the differences between both disciplines and how can they stimulate and complement one another?

For an answer, we focus on a project – a collaboration between Art Foundation Schoeppingen and LWL-Archaeology Muenster – in the small town Schoeppingen, north-western Germany in 2011/2012. Based on archaeological data, artists developed visual scenes of the past for optical time machines, which were installed throughout Schoeppingen. In these time machines the current location could be viewed at a certain time in the past.

The images made use of archaeological data and reconstructions, but referred as well to the present, and included also aspects that normally do not appear in the scientific context.

Art is able to transfer diverse abstract data into one concrete image. It allows to experience the past in a more direct and at the same time playful way. Additionally, artworks combine rational with intuitive and associative thinking. Thus, artworks can enable a in some respect more holistic view of the past.

The Schoeppingen project shows the benefit of the collaboration between archaeology and art in our image- and knowledge-based society.

### **D02.04: The artistic interpretation of the archaeological excavation 2012–13 at the property Nedre Ramme, Vestby Norway, owned by the artist Edvard Munch 1910–44**

by **B. Kjartan Fønsteli** (*Akershus County Council, Norway*), **Vilde Vegem** (*Akershus County Council, Norway*)

During the excavation at Munch’s property at Nedre Ramme the artist Vilde Vegem documented, analyzed and interpreted the archaeological work and the progress of the project. Her work includes, among other, 3D-images of every artefact found, the excavated site, Munch’s house and also the landscape of Nedre Ramme. The physical material representing the traces of the life and work of Edvard Munch and other residents reappear from the soil, the dirt, and time as an artistic interpretation, documentation and outreach.

Bringing an artist on board documenting expeditions and scientific findings has a rich history, but is no longer commonplace. The act of engaging a contemporary artist into this archaeological project generated more than a specific artistic documentary work. Contemporary artistic interpretations and ideas addressed the excavation forth to the present and back to former times, and out of the realm occupied by the famous painter. Furthermore, the artist’s intent of a cross disciplinary collaboration emerged as highly prolific and an invaluable resource for the transformation and elevation of synergetic ideas and approaches.

### **D02.05: Universal – Archaeology meets art at the Joanneum**

by **Marko Mele** (*Universalmuseum Joanneum GmbH, Austria*)

Universal museum Joanneum is one of the largest museums of its kind in Europe. Divided into 10 museum departments Joanneum combines historical and natural sciences with different art collections. In the year 2009 the new Archaeological museum was opened in Eggenberg Castle in Graz. With his thematic approach to archaeological objects it differs from most similar exhibitions.

In 2011/12 the Archaeology museum hosted two artistic works: Super Egg from Simon Starling & Superflex and Mirrors from Michelangelo Pistoletto. Both works were integrated into the permanent exhibition. The first temporary exhibition in the new museum “The Beginning of Time” opened in 2011. Chinese artist Ai Weiwei and a US artist Sharon Lockhart were invited to present their view on the stone artifacts from the Paleolithic period. A collaboration with artists from Graz Rhizom & e.d gfrerer started in the year 2012 for the preparation of the exhibition “Brought to light”, that was presented in Maribor, European capital of culture 2012. Artists not only had to deal with archaeological objects but also with the common history of two nations. Their input wasn’t restricted to the exhibition rooms but they also presented their ideas in the public space of the inner city of Maribor.

#### **D02.06: Lost landscapes: Routes between arts and archaeology**

by **Kate Sloan** (Peter Potter Gallery/University of Edinburgh, UK), **David Connolly** (Connolly Heritage Consultancy, UK)

Since 2010, The Peter Potter Gallery and Connolly Heritage Consultancy have worked in partnership to develop a unique engagement strategy for the rural region of East Lothian, bringing together community-focused archaeology with contemporary arts projects and involving thousands of participants. We will explore the extraordinary outcomes of this strategy to date and investigate the relationship between the arts and heritage into the future. As well as offering an overview of our programme, we address the following key issues in this approach:

- New partner-funding possibilities in the UK
- Network building and sharing
- The gallery as a hub for heritage engagement
- Contemporary art and the dissemination of heritage
- Archaeology as a tool for community cohesion and engagement

It is the assertion of this paper that the funded and large-scale collaborations between *ecology and art* can be replicated as a model of partnership working for *heritage and art* too. There is unrealised potential for art organisations to work in partnerships with archaeologists to produce a means of engaging new audiences for both groups.

#### **D02.07: The power(lessness) of material remains within the transformative and “subversive” practices of art**

by **Anna Zalewska** (Maria Curie-Skłodowska University, Poland)

The presence of past remains not only poses ethical, ontological or epistemological but also aesthetic challenges. Especially in the context of archaeological finds and masses of material remains related to the tragic events of the twentieth century (mass murders, genocides), the words of the ancient historian Philostratos gain particular pertinence: *a certain charm is found in these very wounds*. In my presentation, I will discuss the artistic consequences of being susceptible to this *charm* and consider the extent to which said *charm* can be comprehensible to those partaking in the process of retrieving objects from the ground. From the archaeologist's point of view, the most visible are transformative practices. They constitute ample evidence that the presence of certain fragmentary and de-contextualised material relics of the past can stimulate not only cognitive but also artistic initiatives. I, however, will focus on identifying more subtle techniques characterised by *the principles of assemblage, de-contextualisation and re-contextualisation of the “readymade” media material appropriated into the scope of artistic operations*. I label the techniques characterised by this type of determinants “subversive”. This term conveys a very technical dimension to denote operations performed on objects. Subversion in this sense can be understood as *a certain methodology or technique of constructing works of art*.

#### **D02.08: Focal velocity in abstraction and archaeology**

by **Arturo Rucci** (Independent Artist, USA)

Regardless of institutional or popular preconception of their respective discipline, the Archaeologist and the Artist are defined by a shared imperative: Each is irrevocably responsible for the difficult relationship between *Source* and *Reception*. While the particulars of *Source* discovery are forever absolute, *Reception* remains burdened by the nature of perception and its vulnerability to shifting circumstance.

Managing knowledge from *Source* to *Reception* is only achievable through *Active Selectivity*. While parallels can be drawn between many disciplines the basic traits shared between Archaeological investigation and Abstract painting are peculiarly similar. Thus *Active Selectivity* for both begins with equal consideration of the following factors: Every *Source* – commotion or reference is a particular. Every *Reception* – relay or presentation is expected and corruptible. And, perpetually present is the *Physical*: from material *Source* to *Reception* materiality.

From *Source* to *Reception*, the most important category of *Active Selectivity* available to and shared by both the *Archaeologist* and the *Abstract Painter* is *Focal Velocity*. *Focal Velocity* is the ideal rate and path from *Source* to *Reception*. But, beyond programming the relationship of speed and direction, *Focal Velocity* considers all measurable and potential points of *Commutive* entry and *Relay* departure, every calculatable and theoretical external *Commutive* object or force, and every immediate or hypothetical perceptual *Relay*.

## **D02.09: An archaeology of Stonehenge replicas**

by *Rebecca Younger* (University of Glasgow, UK), *Kenny Brophy* (University of Glasgow, UK)

Stonehenge is something of an iconic site for non-archaeologists and archaeologists alike, inspiring the construction of replicas around the world. These modern monuments take various forms. Some are intended as artworks, like Jeremy Deller's *Sacrilege*, an inflatable recreation of Stonehenge. Others have different meanings, such as the astronomically-aligned Stonehenge Aotearoa, New Zealand; or henges built as protests or political statements, such as Achill-Henge, Ireland, or the Carhenge sculpture built during the 1990s in Glasgow as an anti-motorway protest.

In this paper, we consider these Stonehenge-inspired contemporary artworks from an archaeological perspective. As interpretations of archaeological monuments created by non-archaeologists, replica monuments offer insight into the ways the public perceive prehistoric monuments, and how they receive archaeological interpretations of monuments. We will also consider how the contested nature of Stonehenge has impacted on the ways alternative stonehenges have been used as a focus for protest and subversive agendas. Many Stonehenge replicas employ perceptions of Stonehenge as enigmatic. Does this reflect problems in the ways archaeologists communicate prehistoric sites to the public? Comparisons between replica monuments and 'authentic' monuments might also allow archaeologists to reflect on how we define and interpret 'real' monuments, and to question perceived distinctions between art and archaeology.

## **D02.10: Why archaeology? Interviews with artists.**

by *Estella Weiss-Krejci* (Austrian Academy of Sciences, Austria), *Edeltraud Aspöck* (Austrian Academy of Sciences, Austria), *Mark Hall* (Perth Museum & Art Gallery, UK)

This paper provides a short introduction to the work of selected artists that have created installations at archaeology museums throughout the world or have otherwise been inspired by archaeology. We also will present the results of qualitative interviews with some of these artists. Our questions focus on their motivations for the engagement with archaeological topics, the feedback by the press and the public and if/how their interaction with archaeology has affected later artistic ideas and careers. We hope to illustrate some of the transformation processes that are at work when an artist produces art inspired by archaeological objects.

## **POSTERS**

### **D02.01-P-3: The Maps of Time Project: A 4D virtual public archaeology**

by *Dragos Gheorghiu* (National University of Arts, Romania), *Livia Stefan* (Institute for Computers ITC, Romania)

#### **[INTERACTIVE POSTER/EXHIBITION]**

This poster is a virtual exhibition, and represents the map of the Vadastra site, part of the project "The Maps of Time". A number of **Points of Interest** and **Latitude Longitude Altitude** markers are positioned on it, representing the locations to be discovered by the public in a virtual exploration in four dimensions. Every POI has attached layers of information to be explored in the manner of an archaeological stratigraphy. To access them the public will use **Augmented Reality/Mixed Reality**, (smart phone or a PC tablet, equipped with at least a rear video camera and a GPS receiver).

The visitors will be invited to scan a QR code for the launch of the application, followed by the LLA images of reference. Thus, they will have access to a mixed reality environment, under the form of different reconstructed chronological levels. All the virtual information presented is under the form of 3D reconstructions of the prehistoric and Roman buildings on the site, augmented with video films with re-enactments carried out in the reconstructed contexts. The mixed reality thus produced by a group of experimentalists and artists shows how science and art can combine into a cohesive approach.

### **D02.02-P-3: Archaeological methodology as art**

by *Ildikó Pintér* (Institute for the Protection of Cultural Heritage of Slovenia, Slovenia), *Lara Badurina* (University of Rijeka, Croatia), *Philip Mason* (Institute for the Protection of Cultural Heritage of Slovenia, Slovenia)

The poster presents the parallel views of the archaeologist and the artist on artistic projects that use archaeological methodologies. Collaboration with archaeologists inspired the artist to undertake two such projects. The project »Souvenirs Made In« (1999–2003: [www.larabadurina.net/project/1/souvenirs-made-in](http://www.larabadurina.net/project/1/souvenirs-made-in)) utilised surface collection and sought to present modern society in different parts of the world through discarded, lost, apparently mundane arte-

facts, to discover ways of life and relationships to the outside world, to depict both space and time. The project »Limited series« (2006–2011: [www.larabadurina.net/project/2/limited-series](http://www.larabadurina.net/project/2/limited-series) – Chinese vases) focused on post-excavation procedures. This presented fragmentation and deliberately incorrect reconstruction of artefacts, the assemblage of new contexts through the creation of new objects of singular character and inherent uniqueness.

The above projects are utilised to highlight the different views of the archaeologist and the artist derived from the same methodological framework: of methodology, primary context characterisation, the role and processing of artefacts, the understanding of material culture within socio-cultural processes, the relationship between the tangible and the intangible, the formulation of interpretation and its transmission to the wider public. Is it possible to recognise new approaches to interpretation on the basis of this work? Do these views of artefacts alter our relationship to them?

**D02.03-P-3: Tales from the archaeological excavation of Munch: The pendulous figure of time, the cabinet collection and the artist's stereo archive**

by Vilde Vegem (Akershus County Council, Norway), B. Kjartan Fønsteli (Akershus County Council, Norway)

Suspended excavated artefacts are constellating in a pendulous sculptural installation, recreating and visualizing time. Being shaped by the artefacts and their dating, from prehistoric to present, the sculpture represents people passing and their interaction through time. Munch who lived and worked at the site consequently contributes. These people are now memorialized and have become co-creators from the past alongside the present artist. The installation is at the same time a representation, a body and an identity in the present. The lightning creates another dimension by throwing silhouettes on the surrounding walls. In the shifting of light, value and the layering of new shapes are brought into existence, composing new visions, in space, depth and time.

A substantial number of the excavated artefacts, neatly arranged, are spread over the floor, unveiling bits and pieces of life, of history. It is a complex symbolic archive, correlating and borrowing its looks and logic from the Cabinet of Curiosities and the scientific museum. It draws a line from Ole Worm to the contemporary artistic vocabulary, expressing the scientific material and the results of its study.

Conjointly the artworks stage a graceful and rhythmic visual record of archaeological methods and of the excavating process. Vegem's artistic work will be presented as 3D photographs shown on a 3D TV-screen. We will bring along the screen, 3D goggles and a DVD player.

## Session D03

### Digital heritage: cross cultural conversations or nationally embedded soliloquies?

Friday, 6 September 2013, 14:00–18:30

Room: EU 102 (Building 1, ground floor)

**Organisers:** Don Henson (University College London, UK) and Diane Scherzler (Deutsche Gesellschaft für Ur- und Frühgeschichte/German Society of Pre- and Protohistory, Germany)

Digital technologies are commonly used by archaeology and heritage organisations to impart knowledge and communicate with various audiences, such as fellow professionals and members of the public. People who would not normally visit heritage sites will engage with heritage online, and ICT can produce powerful interpretive experiences that attract new visitors to sites. While archaeological and heritage sites are locally situated, their potential audiences are far wider. Digital technologies can address people from more than one country, and allow us to place our local sites into a wider cultural context that often crosses international borders.

This session seeks to explore how far the potential for digital technologies to encourage cross-cultural exchange of ideas and approaches is being realised, and the issues that lie behind this as an aim of heritage interpretation; such as increasing mutual cultural understanding. We are also interested in how engaging with audiences through digital communications can help inform archaeologists' own understandings of their work through stimulating self-reflexivity. Does this require a different perception of the role of the archaeologist, not so much as the expert but as the facilitator of people's explorations of the past. We believe that open access to knowledge and skills has the potential to strengthen both society and the research community.

We welcome papers from academics and heritage practitioners interested in this issue. Can national traditions of archaeological practice and heritage management be provided with a trans-national context? Are we really interested in reaching international audiences? Are there cultural barriers in the way of understanding or appreciating other countries' heritage? What are the political barriers to international heritage outreach? Can digital technologies allow us to overcome language barriers? We are especially interested in whether the digital age is really allowing cross border and cross-disciplinary perspectives or only perpetuating existing national archaeological communities.

#### D03.01: The Real Thing!!

by Valerie Higgins (*The American University of Rome, Italy*)

How does seeing 'the real thing' compare with digital reconstructions and re-enactments? Is it a disappointment to see a crumbling Roman ruin after having seen a perfect reconstruction? Or does the grandeur of the original make the reconstruction seem tawdry? Data were collected from American students in Rome upon seeing the Colosseum for the first time. The aim of the research was to evaluate the impact of seeing the original monument for the first time, after having seen it virtually. With the growth of ever more sophisticated CGI and virtual reconstructions and the threat to traditional teaching from MOOCs, archaeologists need to be able to articulate the benefits of an authentic experience and studying monuments first-hand.

#### D03.02: Digital technologies and 'local' and 'global' archaeology and heritage practice

by Sarah Colley (*University of Sydney, Australia*)

What makes an archaeology or heritage project 'local' or 'global'? Notions of 'local', 'regional', 'national' and 'global' are fluid constructs best understood in relation to histories and forces of e.g. colonialism, nationalism, economics, capitalism, globalisation etc. depending on your theoretical standpoint. This paper discusses the further possible impact of digital technologies on ideas about the 'local' and 'global' by examining archaeology and cultural heritage practice in an Australian context. In 2011 I conducted interviews with thirty cultural heritage practitioners and archaeologists who work primarily in and/or from Australia about their use of and attitudes to digital technologies in their work. Some projects could be described as highly 'local' or even 'parochial', while others have regional, national and international reach, interest and significance. Digital technologies potentially make 'local' projects accessible to wider 'global' audiences and stakeholders. Technologies can facilitate communication and information exchange between stakeholders, audiences, producers and consumers of digital media regardless of their physical location. Why then do some archaeology and cultural heritage projects remain essentially of local interest while others expand their reach to wider 'audiences' or elicit non-local interest or participation? My paper will seek answers to these questions using results from the interview survey.

### **D03.03: “The world must learn what happens here!” Web 2.0 and archaeological heritage during armed conflict**

by Diane Scherzler (German Society for Pre- and Protohistory (DGUF), Germany)

The destruction of several Roman buildings near Dara'a in Syria's Southwest wouldn't have been noticed outside the war-damaged country if there wasn't someone secretly filming the bulldozer that destroyed Syria's archaeological heritage under the protection of a tank and a hand of soldiers, and if there wasn't somebody who uploaded the video to Youtube. The appearance of social media has fundamentally changed how the threat to heritage sites during armed conflict is perceived worldwide. Regarding Syria, for example, images, videos, and tweets are often the only bits of information that reach the world. They are used by mass media or they are curated with the help of social media storytelling tools. This paper tries to explore in what way digital technologies and social media (as cultural technique) change the perception of heritage that is threatened or looted during conflict. It makes a fundamental difference whether one reads of a local site that was destroyed or whether one can watch and hear the destruction. But what about the quality of data: How can we validate eye-witness videos as authentic? Do we, ultimately, need a different perception of the one who protects or defends heritage? Is it still the archaeologist?

### **D03.04: Digital publishing in open access helps crossing borders**

by Frank Siegmund (Heinrich-Heine-Universität Düsseldorf, Germany)

Scientific archaeological publications are usually restricted by several inconsiderable but effective borders, like different abilities of English as lingua franca and different research traditions. Additionally, archaeological research is often focussed on cultures with a limited spatial distribution. Growing distance to their specific area causes a diminishing notion for other regions. Moreover, the acquisition strategies of libraries cannot be forgotten. Usually they postpone publications concerning distant areas of the world. Therefore by practical reasons archaeology tends to be regional science. Another inconsiderable border lies between professional researchers and the public. Access to printed publications or online publications behind paywalls is much easier for academic researchers and it is more difficult, expensive and time-consuming for people outside these circles. Publishing online and under the rules of open access diminishes some of these limitations efficiently. An easier access could draw a new and wider audience into the discussion, and thus integrate new and unexpected questions and ideas into archaeology. The journal „Archäologische Informationen“ (www.DGUF.de) has additionally been published in open access since 2013. The presentation by one of the journal's editors will describe the strategy behind this step more detailed, analyse its obvious advantages, potential disadvantages and risks of this decision as well.

### **D03.05: Better than metal detecting: the impact of early newsprint on the archaeological record in Britain, Ireland and beyond?**

by Stephen Briggs (UK)

A vast amount of newsprint has become available digitally over the past decade in Britain and Ireland. It is proving to have great potential as a source of unique archaeological and historical information – in papers as far back as 1720. Its content includes original accounts of artefact and site discoveries – even of early excavations. Among the more valuable outcomes are up to 500 early bronze age burials from Scotland, most previously unknown. Other 'new' finds or re-provenancements of later prehistoric artefacts include stone implements, gold ornaments, bronze hoards, a 'new' late bronze age cauldron, and an account detailing the discovery of the iconic Scottish Celtic Iron Age Torrs Chamfrein (bronze pony headpiece) which helps debunk an important theory about its original construction. An even more extensive project now totals c 1400 'new' medieval and later coin hoards (perhaps a fifth to a quarter of the total known resource). Early newsprint impacts even more dramatically upon written history, illuminating the activities of hundreds of local (and some national) organizations (communal, commercial, industrial and religious) whose documentary records have not survived. This important unfolding research tool must have applications in other countries. It is the LiDar of archaeological and historical research!

### **D03.06: Communicate global, act local: possibilities and limits of digital heritage programs**

by Paloma Gonzalez-Marcen (Universitat Autònoma de Barcelona, Spain), Susana Vega (Universitat Autònoma de Barcelona, Spain)

In 2010 a project began for opening to public access the Palaeolithic site of Roca dels Bous, as part of a cooperation project with France funded by the EU. The specific characteristics of the site (a seasonal camp of Neanderthal groups with limited visible archaeological features) and its location in a area of the Catalan Pre-Pyrenees with low touristic

intensity despite its attractive scenery and heritage, promoted the idea of creating a model of integral digital access to archaeological research and heritage that intended to overcome the limitations of visibility, on the one hand, of the archaeological record and, on the other hand, of the very existence of the site.

This model has meant that currently visits to Roca dels Bous are made exclusively with digital support (I Pads) connected to an interactive website. In parallel, we have incorporated social networks (Facebook and Twitter) into the program since its beginning, initially in order to activate visits to the archaeological site.

In this paper we present a first comprehensive assessment of this digital archaeology program which outlines the existence of differentiated dynamics levels and degrees of impact between physical experience and virtual communication in relation to archaeology.

### **D03.07: Community Archaeology and Human Remains in the Digital Age**

by **Faye Simpson** (*Manchester Metropolitan University, UK*)

In 2010, Oakington Anglo-Saxon Cemetery, Cambridgeshire (UK) was granted a Ministry of Justice licence to excavate human remains without barriers. The approach to the presentation of remains was reflective of this open access model, aiming to transcend beyond an expert structured approach, to one that enabled the public to play a role in the process. Digital media provided a platform to achieve this, with social media enabling the global community to become part of the discovery and interpretation. The greatest value for the project was the digital public commentary, which provided an arena for critical self-reflection. This encouraged the archaeologists to think beyond their own cultural belief systems; confronting opposing attitudes attached to the discovery of human remains. It is this understanding that has helped inform future practice, one driven by different communities. This case study provides guidance for the future application of digital technology, in providing both a forum for discussion and confrontation of disparate attitudes to human remains. Digital technology has provided the apparatus to break down barriers between communities, meeting both professional and public demands. Still this approach does not come without issues, especially when it involves conflicting community values.

### **D03.08: “Celtica Antiqua”: The Celtic Cultural Route**

by **Francisco Burillo-Mozota** (*Zaragoza University, Spain*), **Marta Chordá-Pérez** (*Zaragoza University, Spain*)

The European Celtic Route was in force from 1992 to 2006, when the European Council's Cultural Department decided to rule it out because of the inner incapability to overcome difficulties of such amount of different visions about Celtic Route and Celtic culture. In 2008 the management of the Celtiberic Route Project ([www.celtiberica.com](http://www.celtiberica.com)), from Zaragoza University, proposed to the European Institute of Cultural Routes (Luxembourg) re-boost the Celtic Route, but restricted to the Antiquity places and sites, under the name of “Celtica Antiqua”. The most part of the archaeological “Celts” sites, from its formative period on the Iron Age to its complete integration on Roman policy just at the end of its cultural developing, have been invited to be included on the itinerary.

The web page, translate on English, French, German, Spanish and Italian, will provide all the relevant activities from the archaeological sites outlined on the Cultural Route framework. The web also will develop the Virtual Museum, composed by the 3D catalog of the most important items on celtic culture and the Virtual Library, which will gather the most relevant and recent reports (available for E-Book readers) and will encourage the PDF conversion of ancient and discontinued books.

### **D03.09: Crisis? What crisis? Forvm MMX project experience**

by **Marcelo Castro** (*Regional Government of Culture and Sport, Junta de Andalucía, Spain*), **Francisco Arias** (*Archaeological Ensemble of Castulo, Spain*), **María Libertad Serrano** (*Forvm MMX Project, Spain*)

The *Archaeological Ensemble of Castulo* (Linares, Jaen, Spain) had been created in 2011 by Junta de Andalucía encompassing the archaeological site and its monographic museum. However, the new institution has not received more public funding due to its new heritage statement. Forvm MMX project had find additional resources during 2011 and 2012 supplied by the coordination of various government agencies, professionals from different disciplines, and specially, in many of its tasks by the wide cooperation of citizens.



The *Forvm MMX* project has developed its own **system of archaeological generation documentation**, called **TooWaste**, which includes three-dimensional modelling of stratigraphy and archaeological objects and the immediate translation of the archaeological data to a remote computer. The system has been designed to allow simultaneous work of several teams; meanwhile Archaeological Ensemble of Castulo is being a testing bench itself.

We have planned a mid-term project called “*XXI century in Castulo*”, which aims to **shed light on its long historical sequence**, (Copper Age – XV century). This paper seeks to establish **new partnerships** with researching groups and institutions which aim to share our goals in the coming years and thus expand the domain of European public archaeology. We need everybody looks and hands on Castulo.

### **D03.10: Connecting with Collections at the Museum of Archaeology and Anthropology, Cambridge**

by *Lorna Richardson* (UCL, UK)

This paper will report on the AHRC Connecting with Collections digital project undertaken at the University of Cambridge Museum of Archaeology and Anthropology (MAA) from February – July 2013. The MAA holds a collection of local, national and international archaeological and ethnographic materials, accumulated since the eighteenth century. This diverse, unique and internationally significant collection has the potential to support a wide global audience through the use of digital technologies to widen impact and engagement, with cross-disciplinary relevance beyond the fields of archaeology and anthropology.

The Connecting with Connections project has examined the forms and methods by which both the public and fellow museum professionals outside the museum have engaged with the museum through digital technologies. This paper will ask: How far has the museum managed to explore the potential for digital public engagement with the nations and communities represented in their displays? What impact has the use of participatory digital and social media technologies had on linking the museum collections with the diverse communities represented in the collections? What are the opportunities for similar museums to widen participation beyond the local and regional context, and how can we successfully engage new international audiences on a more collaborative platform?

### **D03.11: Engaging with archaeological collections and sites in the North East of England: the value of Facebook**

by *Chiara Bonacchi* (Newcastle University, UK), *Areti Galani* (Newcastle University, UK)

This paper will discuss the value of Facebook engagement with museums holding archaeological collections and with archaeological sites, compared to other types of cultural institutions and activities, in the North East of England. The contribution will be primarily based on the results achieved through the project ‘A people-centred approach to understanding cultural social media activities: the case study of Tyne and Wear Archives and Museums’, funded by the AHRC Cultural Engagement Fund. Such information will be integrated with data regarding other museums, galleries and heritage sites in the North East. This region offers an interesting perspective on the utility of social media engagement in areas of the UK with low levels of digital participation and high indices of deprivation. Further, the presence of the World Heritage Site of Hadrian’s Wall next to museums and sites of mainly regional significance will allow observations on the ability of social media to reach international audiences, beyond local ones. The paper will be discussing the value of Facebook from both a user and an organisational perspective, particularly for interpretation, relationship and identity building and for attracting new audiences. In this respect it will also reflect on how digital engagement might contribute to regional regeneration.

## Round Table D04

### Public Archaeology from the Ground Up

Thursday, 5 September 2013, 08:30–13:00

Room: UU 407 (Building 2, 4th floor)

**Organisers:** Jaime Almansa-Sánchez (IAS Arqueología SLU, Spain) and Lorna Richardson (University College London, UK)

Although Public Archaeology has grown as a distinct discipline in archaeological practice during the last decade, there is an urgent need to explore, rethink and define the terms we are working with. The theoretical basis of Public Archaeology is still extremely weak and poorly understood outside the Academy. Yet Public and Community Archaeology is a growth area, as engagement, participation, community and dialogue become political buzzwords in a difficult economic climate. As a discipline, we cannot continue to expand without a clear framework of theoretical understanding and working concepts. Several initiatives have already started that seek to address these issues, and the support and involvement of the European Association of Archaeologists is central to these ventures.

This round table session will discuss current aspects, issues and problems facing the discipline, and sketch out the future aims of Public Archaeology, in order to understand where we are and decide where we want to go. As a starting point for the definition of the discipline from our European perspective, we are seeking debate around the concept and practice of Public Archaeology, its theoretical framework, the social and ethical implications of our work and the tools available for sharing and developing the discipline internationally.

The session will also host the elections and first meeting of the new Committee of Public Archaeology.

#### D04.01: Which Public? What Archaeology?

by Adam Gutteridge (*Guild of St George, UK*)

The rapid and startling growth of 'public archaeology', both as a notion and as a set of practices, has hardly gone unnoticed over the past decade or more. Assessing its recent developments and exploring terminology, best practice, and theoretical frameworks is a vital part of understanding how and why public archaeologists do the things they do. I look to this round table as an invaluable opportunity to query and question the nascent sub-disciplinary boundaries springing up around public archaeology, and it can be especially vital in exploring the ways in which such an outward-facing and explicitly participatory research sphere can engage with the political needs of contemporary society.

#### D04.02: Big Society Archaeology: Politics and the development of community archaeology in the UK

by Faye Simpson (*Manchester Metropolitan University, UK*)

In the UK, recent changes in central government have directly influenced the practice of community archaeology, which is seemingly losing political favour. It is therefore the ideal time to look back at the political and public role community archaeology has played and to suggest what the next move for this mode of archaeological outreach should be. This paper examines the politics behind community archaeology in the UK over the last two decades and aims to understand the character and extent of its impact on community archaeology's values and practice. From the 'public archaeology' that emerged during the Conservative Party's influence during the 1980s and 1990s, to New Labour's 'community archaeology', the new Conservative-Liberal Democrat coalition appears to be facilitating the development of new forms of archaeological outreach that are here referred to as 'society archaeology'. The paper questions whether outreach projects should change their name, aims and practices in order to gain political support and whether this rebranding is genuinely significant? It concludes that community archaeology has been politically manipulated and suggests its future lies in it being politically aware rather than politically controlled.

#### D04.03: Why say dealing with archaeology, and not with the past or cultural heritage?

by Akira Matsuda (*University of East Anglia, UK*)

This paper offers a tentative response to the question that haunts anyone seeking to develop public archaeology into a full-fledged discipline: why say dealing with archaeology, and not with the past or cultural heritage? The author argues that it is important to stick to archaeology as a modest attempt to counter the fragmentation of the past in the globalising world, and to give some substance to otherwise too opportunistic and protean cultural heritage. Both restricting and liberating nature of the methods and methodology of archaeology is highlighted.

#### **D04.04: Changing methods and approach: A policy-oriented Public Archaeology**

by Chiara Bonacchi (Newcastle University, UK)

This paper argues the case for a more policy-oriented Public Archaeology, focusing on the theoretical definition and measurement of the social, cultural and economic values of archaeology for individuals, communities and society. The presentation will highlight the need to go beyond the more deontological discussions of the past, and concentrate instead on the construction of a solid evidence base of public attitudes and behavior towards archaeology. Such base will be valuable for informing funding policy and for supporting archaeological site and museum management as well as public engagement initiatives undertaken by a range of different actors, from academics to commercial units. To take this approach forward, however, a firmer knowledge of social research methods is needed across the sector. Quantitative and mixed mode methodologies will be particularly useful to create the national and cross-national datasets that will be key for contextualising individual case studies. Both strengths and weaknesses of this proposed approach will be discussed in a European perspective, with more specific examples taken from the UK and Italy, where the author has contributed to the growth of a new *Archeologia Publica*.

#### **D04.05: Public archaeology: towards a sustainable future**

by Paul Belford (Clwyd-Powys Archaeological Trust, UK)

Public archaeology is sometimes regarded as not being 'proper' archaeology. Critics suggest that it lacks theoretical frameworks and methodological rigour, and that it fails to make a 'real' contribution to the discipline. This paper argues that in fact public archaeology has deep roots in a variety of theoretical traditions, and also that it can and does provide very meaningful answers to academic research questions – as well as delivering some very important social outcomes. Public archaeology should be embedded in every aspect of archaeological practice. However in order to do this, public archaeology needs to be socially, intellectually and economically sustainable. Using examples of projects from England and Wales, this paper will discuss how this might be achieved in the future.

#### **D04.06: The Conflict on Public Space and Heritage in Israel**

by Talia Shay (Technion, Israel Institute of Technology, Israel)

My involvement with Indigenous archaeology has set me to look into a public event, called "Holiday of Holidays" that takes place, annually, in one of the poorest and densest quarters of my hometown, Haifa, around Christmas time and celebrates the festivities of the three religions. Three questions are discussed in relation to the festival: firstly, does a public event of this sort produce a temporary cohesion of the urban space; secondly, does it initiate a social change of the arena; and finally, does the event occur without creating any consequences in the public space? My research includes theoretical issues, such as "mixed towns" and "nationalistic thinking", as well as observations and interviews with the local Arab inhabitants of the area and the Jewish guests who perform a sort of a secular "pilgrimage" to the festival. In order to interpret the intricate picture of the festival a model of a constant conflict on the local space is suggested between those who would like to guarantee the essentially national identity and the power structure in Israel, and the indigenous populations who would like to have a say in relation to their cultural heritage.

#### **D04.07: Towards a theory for public archaeology and beyond**

by Tim Schadla-Hall (University College London, UK)

One of the problems with defining the range that is seen as public archaeology is the constantly changing nature of archaeological activity. The persistent, apparent, requirement to bind the area to a tight definition, or even create what has been referred to as a "sub-discipline" misses the point – just as the constant need to apparently create something called community archaeology, or political archaeology does. There is little doubt that since Ucko proposed a university degree in Public Archaeology, the argument over definition has proceeded apace as attested by a flow of papers on a global scale. Whilst undoubtedly it will be a challenge to define –or– to create a theoretical basis for a subject that tends to react, and act, in von Bertalanffy's terms as "a generalised ear"– in this case for a range of related subjects and activities that are both archaeological but also social, economical, political, educational, etc. The need to debate this area is evident and timely in terms of both the survival of archaeological activity and its maintenance. Whether or not it is possible to agree any perspective –to let alone a European, more hopefully, global– requires debate to make a start on this.

#### **D04.08: Seeing and believing: the practice of community archaeology today**

by *Cara Jones* (Archaeology Scotland, UK), *Phil Richardson* (Archaeology Scotland, UK)

There have been many debates concerning the nature of public and community archaeology, definitions and implications for 'normal' archaeology. We see also unhelpful divides or distinctions are beginning to develop within community archaeology. We are amongst the fortunate few that are employed as Community Archaeologists and we come from a background of using theory and practice to develop successful working methodologies. We work at the coal face yet we try to stay in touch with wider archaeological discourse in order to fully inform our working practices. That said, looking to theoretical sources on community archaeology, we find barriers – not only physical barriers (i.e. lack of access to published material) but also within theoretical discussions and research recommendations, which we feel, in some instances, bear little resemblance to the day-to-day practice of Community Archaeology. Perhaps due to Community and/or Public Archaeology existence as a developing aspect of archaeology, we feel that dialogues between all those involved, still takes place within closed circles. Within this round table discussion, we would like to open out the circle and attempt to discuss the broad nature of our work and challenges we face when confronting these 'barriers'.

#### **D04.09: But isn't all archaeology 'public' archaeology'?**

by *Reuben Grima* (University of Malta, Malta)

The debate on the role and future aims of public archaeology is inseparable from the wider debate on the role and purpose of archaeological practice itself.

The history of archaeology as a discipline, from its gestation as the leisurely preserve of a privileged minority, through the cradle of nineteenth century imperialism, has left voluminous and thorny baggage, not all of which is easily discarded. The critical re-evaluation of this inheritance, and the redefinition of the social and political role of archaeological practice, is an ongoing project, and a key focus in what has come to be termed public archaeology. It may be less useful, therefore, to think of public archaeology as an ancillary domain on the edges of archaeological practice, and more useful to think of it as an area of concern that every archaeologist and every practitioner in kindred fields has a direct responsibility to engage with.

#### **D04.10: Public archaeology: The thin line between emancipation and manipulation**

by *Anastasia Chourmouziadi* (Aristotle University of Thessaloniki, Greece)

The expression "public archaeology" has been mainly used as a blanket term covering every thought and activity that could relate archaeology and society. Trying to determine its practical field and theoretical toolkit we should, first of all, note that the adjective "public" can refer both to the production and the consumption of archaeological products, indicating two discussion paths respectively.

We cannot elaborate a European methodological and theoretical frame if we don't take into consideration that different legislations differentiate, accordingly, the relative weight of state control over archaeological activity and products. Strict regulations limit, perhaps, the exploitation of the past by profit seeking private bodies, but do not prevent its usage for the support of nationalistic narratives.

Furthermore, regarding the consumption of archaeological product, we cannot focus on the management techniques that encourage the implication of non-archaeologists in peripheral archaeological activities, ignoring that such an involvement can overemphasize the technical and emotional aspects of the study of the past, leaving to the experts the "burden" of authoritative interpretations. On the other hand, working on innovative and effective methods in order to bring the public closer to archaeological knowledge, we should reflect on the content and social impact of this knowledge itself.

#### **D04.11: Going public: a manifesto for the contemporary relevance of archaeology**

by *John Carman* (University of Birmingham, UK)

It is commonly assumed that any form of public archaeology is primarily (a) about archaeology and (b) for the benefit of archaeology. This paper will challenge these assumptions directly. Drawing on international examples, it will demonstrate that the most 'public' examples of public archaeology are usually not really about archaeology, but are devices where archaeology serves as a means to other ends. It will also demonstrate that the real benefits of these projects lie beyond archaeology. The paper will therefore offer a Manifesto for Public Archaeology that emphasises the true public value of archaeological engagement with the world, and the world's with archaeology.

## POSTERS

### **D04.01-P-1: Community Archaeology, Innovation and Public Participation in Your Village: the Gaywood Valley Archaeological and Historical Project**

by Clive Bond (*The University of Winchester, UK*)

In a recession money is limited for archaeology and public participation. However, the Heritage Lottery Fund (UK) has come forward with a new scheme to fund short community-centred projects. The aim is to stimulate increased Third Sector engagement and rates of public participation in local archaeology and heritage. This presentation will discuss the project design, implementation and potential barriers to participation in an urban, suburban and rural landscape that has been under explored, the Gaywood Valley, West Norfolk, UK. The project developed from community interest and need not met by the traditional heritage/curatorial providers. The West Norfolk and King's Lynn Archaeological Society, working in partnership with Cambridge Community Heritage and The University of Winchester was successful with their grant bid and are now part of this innovative 'All Our Stories' Heritage Lottery Fund programme. This is, for West Norfolk, 'ground roots' archaeology!

### **D04.02-P-1: The application of Public Archaeology in Taiwan: A case study of the sites in Taichung City**

by Whei-lee Chu (*National Museum of Natural Science, Taiwan*)

The practice of the conservation of archaeological sites has been quite successful for only two to three decades in Europe, Nevertheless many aspects of these practices are worthy of emulation by Taiwan. This paper attempts to contrast the cases in the UK to the arrangement and conservation of archaeological sites in Taiwan. One case study is drawn from central Taiwan, i.e., the Hui-Lai site which is located in the most valuable land in Taichung city. Various archaeological problems with relevant ethnic and legislation that appear in Taiwan are addressed, and, better ways of conservation and management of archaeological sites in Taiwan are proposed. In the following, the researcher summarizes several problems confronting the archaeological sites in Taichung City, later some possible and feasible suggestions to solve the problems in the near future are discussed.

### **D04.03-P-1: The Home Front (1914–1918) and its Legacies: A pilot project to record UK First World War landscapes**

by Emily Glass (*University of Bristol, UK*)

The Legacies of the Home Front project was set up by the University of Bristol and the University of York with funding from English Heritage and was completed in April 2013. The aim was to examine and document remains of the First World War by engaging local volunteers to research and document sites in two pilot areas: the Lea Valley in NE London and the county of Staffordshire. Primarily this project was designed to document any military or civilian wartime remains built or modified as a direct result of the country being at war. However, evidence was also recorded for destroyed structures and events, such as bombing locations, peace parties or riots. The recording done by the volunteers was fed into a database and the results tested to populate a web-atlas with clickable sites as a mechanism for people to engage with the FWW Home Front landscape. The pilot was also intended to inform a future national public archaeology project which would engage with existing local research groups to record evidence of that conflict in their own localities. This poster will document this pilot project by exhibiting the methodologies developed, the results and outline plans for the future.

### **D04.04-P-1: Village People – Excavating Medieval Village with Kauttua Villagers**

by Leena Koivisto (*Satakunta Museum, Finland*), Eeva Raike (*University of Turku, Finland*), Kari Uotila (*Muuritutkimus Ky, Finland*)

This poster will present an excavation project that took place in the medieval site of Kauttua village, Eura, South-West Finland in 2012. A summary of the scientific results will be given while the main focus is to evaluate the methods of Public Archaeology that were used in implementing the project.

During the field work period over 200 local school children took part in the excavation under supervision of an archaeologist or archaeology student. Also volunteer workers had an important role at the excavation site. A blog for the project was opened well before field season and while excavation was going on the blog was constantly updated by archaeological staff, volunteer workers and children. The blog is still open and in active use.

The large number of visiting pupil excavators required careful planning of many practical matters at the site. This also had an effect on the excavation methods chosen. It is discussed if this impacted the scientific results achieved. Also teachers' opinions on the outcome of a study trip to excavation site are considered.

The project will continue during the summer 2013. The experiences gathered during past field season will be very useful when the new research plan is written.

#### **D04.05-P-1: International Archaeology Day and Public Outreach**

by *Meredith Langlitz* (Archaeological Institute of America, USA), *Ben Thomas* (Archaeological Institute of America, USA)

The Archaeological Institute of America (AIA) constantly looks for new ways to engage the public as it strives to fulfill its mission of promoting archaeological inquiry and public understanding of the material record. The Institute's most recent effort, National Archaeology Day, was first celebrated on October 22, 2011. On that day and throughout the month of October, the AIA, its 110 Local Societies, and several collaborating organizations hosted symposia, fairs, fieldtrips, and more, as thousands joined in an international celebration of archaeology. The authors discussed the results of the first Archaeology Day at the EAA Conference in 2012 and presented plans for a second celebration. The second Archaeology Day in October 2012 was more than three times the size of the first event in terms of both number of collaborating organizations and participants. Over 60,000 people attended more than 125 events around the world. This paper discusses the growth of the event, the triumphs and challenges of Archaeology Day, and evaluates the utility of an event of this nature in informing and engaging the public.

#### **D04.06-P-1: The Blackfriary Community Archaeology Project: who and what is it for?**

by *Finola O'Carroll* (Irish Archaeology Field School, Ireland), *Loreto Guinan* (Meath County Council, Ireland)

The Blackfriary Community Archaeology Project is built around the excavation (ongoing by IAFS since 2010) of the site of the Dominican Friary, founded in 1263 in Trim, County Meath, Ireland ([www.iafs.ie](http://www.iafs.ie)). It arose from a collaborative project which disseminated the results of excavations in the town through a public conference and publication. The site is in local authority ownership and has protection under National Monuments legislation which regulates both its use and any archaeological or other works there.

The ethical basis and goal of this project is to engage the local community with a part of their heritage which is little-known, by re-integrating it into the town life. The field school works alongside the local council and community groups to provide a programme of events to engage the public with the project; they are aimed at linking people with the archaeology of the site and integrating the Blackfriary into the Trim townscape.

By bringing students to the town to dig the site it gives the work and the site economic and social status; by facilitating community use of the space it will bring it back into the public realm and thus, importantly, ultimately ensure its protection.

#### **D04.07-P-1: On the future of archaeological site of the acropolis of Populonia (Archaeological Park of Baratti and Populonia, Italy)**

by *Anna Paterlini* (The American University of Rome, Italy), *Marta Coccoluto* (Parchi della Val di Cornia SpA, Italy)

The archaeological area of the *acropolis* of Populonia in Tuscany (Italy) was inaugurated in 2007, after almost a decade of archaeological research by many Italian universities and other private partners. Notwithstanding the site was intended to become an important part of the visit to the archaeological park of Baratti and Populonia; the complex issues around the conservation of the few standing structures are preventing the public from fully appreciating the narrative of the site. Problems concerning the accessibility of the *acropolis* are both physical –lack of marked walking routes to both excavated and under excavation areas – and cultural – poor interpretation, difficulty for non-specialists to think in “3D”. On the basis of a preliminary study on visitors in the summer of 2012, this paper aims to explore the strategic possibilities to be implemented on site for the involvement of the relevant stakeholders – with specific attention to the local community and the public of non-specialists – in all the aspects of the interpretation process.

#### **D04.08-P-1: Bringing archaeology to local communities: reflection from Southern Norway**

by Ghattas Sayej (*Vest-Agder county council, Norway*)

The topic of public archaeology is quite interesting and it needs more focus among academics and the public. The question is how to achieve this goal and how to engage local communities in understanding and protecting archaeology?

One of the major roles of Vest-Agder County Council (VAF) is to safeguard cultural heritage and impart archaeology to local communities in southern Norway. It is crucial therefore, to bring back some of the archaeological material from this part of the country, back to the local communities. Four different archaeological museums have been opened and local communities have the opportunity to see their cultural inheritance "at home" instead of having to travel to far-flung university museums.

VAF has also a focus to let people get information as smoothly as possible by using modern digital media. Text, films, photos, illustrations and QR-codes are some of the methods that have been implemented. In addition to that, an open channel has been established between VAF and the local communities in the form of school-programs, public lectures, scientific articles, as well as media coverage.

This paper will address the above-mentioned examples and will aim to highlight the importance of public archaeology and digital heritage among local communities.

#### **D04.09-P-1: Theory versus practice: moral dilemmas in applying community involvement in Palestine**

by Monique van den Dries (*Leiden University, The Netherlands*)

Today, archaeologists and heritage managers are considered to have a responsibility towards their various publics and stakeholders. They are – more than ever – expected to strive for social inclusion, to take a variety of heritage values into account, to engage with the public, to consider heritage as a driver for development, to respect cultural human rights, etc., etc. Various conventions, charters and codes of conduct aim to stimulate and assist us in our efforts to achieve these objectives. But what if there is a lanky gap between theory and practice and the local situation makes it very hard to apply the cardinal principles of these charters, conventions, codes of conduct, etc.? This dilemma will be discussed in relation to the Tell Balata Archaeological Park project in Palestine, where it is almost impossible to comply with some of the professional standards due to the political, social and economic situation.

## E: Archaeology of food and drink

### Session E01

#### Integrated novel applications for dietary reconstructions in prehistory

Saturday, 7 September 2013, 08:30–18:30

Room: EU 109 (Building 1, ground floor)

**Organisers:** Domingo Carlos Salazar García (Max Planck Institute for Evolutionary Anthropology, Germany), Cynthiane Debono Spiteri (Max Planck Institute for Evolutionary Anthropology, Germany) and Beatrice Demarchi (University of York, UK)

Dietary reconstructions are key to understanding past patterns of subsistence, which inform about population dynamics and socio-cultural characteristics of different communities. The poor preservation of organic material adds to the complexity of this field of research. However, over the last few decades, novel techniques have contributed considerably to our knowledge of ancient diets, as attested by the wide array of publications on the subject. Biogeochemical techniques in particular, have shown a remarkable adeptness at acquiring data from a variety of archaeological artefacts (e.g. ceramics, lithics, textiles, sediments, plant remains, human and animal tissues), including material which was not routinely targeted before now, such as dental calculus. Biomarker and isotopic analyses are at the forefront of this research. These techniques allow an intensive exploitation of archaeological material that is often available only in small quantities, and would otherwise not have been considered viable for analysis. This session will focus on novel approaches to dietary reconstructions in prehistory that are integrated with archaeological data, including multidisciplinary projects that address research questions from different perspectives. Studies using high resolution microscopy, proteomics, genetics, isotope and organic residue analysis are welcome. Submissions addressing pitfalls in the analytical techniques utilised are also encouraged, as well developments on less destructive sampling techniques.

#### E01.01: Combined analysis of tooth mesowear and microwear: two-scale proxies of Pleistocene ungulate diets

by **Florent Rivals** (Institut Català de Paleoecologia Humana i Evolució Social (IPHES), Spain), **Carlos Sánchez-Hernández** (Universitat Rovira i Virgili, Spain), **Gina Semperebon** (Bay Path College, USA)

The combination of tooth mesowear and microwear techniques has proven very useful for documenting both long and short term patterns in the paleodietary reconstruction of fossil mammals. Tooth mesowear reflects the cumulative wear imposed on molars during a relatively long period of feeding activity (months-years). Tooth microwear is the analysis of microscopic scars produced by food on the occlusal surface and is more sensitive to short term fluctuations (hours-days) which may not be detectable if only mesowear is considered alone. The two methods are not commonly employed in Palaeolithic archaeology to study mammal remains but they can provide valuable information about ungulate immediate behavior and are useful to detect seasonal procurement of game ungulates by hominins. It is important to note that both mesowear and microwear are non-destructive methods and allow the study of faunal assemblages of large sample sizes. We present here a tooth wear analysis of the fauna from the Middle Palaeolithic levels at Teixoneres Cave (Spain). Results of this study establish the usefulness of dental wear techniques as one of many valuable proxies to obtain information about hominin paleoecology.

#### E01.02: Tracking down millet consumption across Eurasian steppe with stable isotope and archaeobotanical analysis

by **Giedre Motuzaite Matuzeviciute** (University of Cambridge, UK & Vilnius University, Lithuania), **Emma Lightfoot** (University of Cambridge, UK), **Xinyi Liu** (University of Cambridge, UK), **Svetlana Svyatko** (Queen's University Belfast, UK), **Martin K. Jones** (University of Cambridge, UK)

One of the economically important plants domesticated in China and cultivated in prehistoric Europe are broomcorn millet (*Panicum miliaceum*) and foxtail millet (*Setaria italica*). These millet species have been reported from European prehistoric sites. Moving from east to west across central Asia, millets were probably the first crops to travel such a vast distance. However, the pathway and the timing of their spread has not been identified yet. We present the newest macrobotanical and stable isotope analysis results from central Asian sites, allowing us to track the pathways and timing of the spread of these crops.



### **E01.03: Crop $\delta^{15}\text{N}$ value expression in bone collagen of ancient fauna and humans: implications for palaeodietary reconstruction**

by **Amy Styring** (University of Oxford, UK), **Rebecca Fraser** (University of Oxford, UK), **Amy Bogaard** (University of Oxford, UK), **Richard Evershed** (University of Bristol, UK)

A major limitation in using the  $^{15}\text{N}$ -enrichment of human bone collagen  $\delta^{15}\text{N}$  values over associated herbivore bone collagen  $\delta^{15}\text{N}$  values to predict the relative contribution of animal protein to human diet is the assumption that the  $\delta^{15}\text{N}$  values of plants consumed by humans and herbivores are identical. In this study, the amino acid  $\delta^{15}\text{N}$  values of fifty human and herbivore bone collagen isolates from Neolithic sites in Germany, Greece and Turkey were determined by gas chromatography-combustion-isotope ratio mass spectrometry. The fraction of animal protein in total dietary protein consumed by the humans was estimated by: (i) comparing bulk human and herbivore collagen  $\delta^{15}\text{N}$  values, (ii) comparing bulk human and herbivore collagen and ancient charred cereal grain  $\delta^{15}\text{N}$  values, (iii) comparing human bone collagen  $\delta^{15}\text{N}_{\text{Glutamic acid}}$  and  $\delta^{15}\text{N}_{\text{Phenylalanine}}$  values, and (iv) comparing  $\delta^{15}\text{N}_{\text{Glutamic acid}}$  values of human and herbivore bone collagen and estimated  $\delta^{15}\text{N}_{\text{Glutamic acid}}$  values of ancient charred cereal grains. Charred cereal grain and amino acid  $\delta^{15}\text{N}$  values gave much lower estimations of animal protein consumption than bulk collagen  $\delta^{15}\text{N}$  values alone, making it clear that dietary reconstruction using stable N isotope analysis is heavily influenced by offsets in the  $\delta^{15}\text{N}$  values of plants consumed by humans and herbivores, respectively.

### **E01.04: Potential of metal stable isotopes as new paleodietary indicators**

by **Klervia Jaouen** (Max Planck Institute for Evolutionary Anthropology, Germany), **Vincent Balter** (Ecole Normale Supérieure de Lyon, France), **Marie-Laure Pons** (Ecole Normale Supérieure de Lyon, France), **Laurent Pouilloux** (Ecole Normale Supérieure de Lyon, France)

Stable isotope compositions of iron (Fe), zinc (Zn) and copper (Cu) differ between plant and animal products, providing potential new tracers for diet reconstructions. To test this hypothesis, we have measured metal stable isotope compositions in plants and bones of herbivores and carnivores within two food webs (Kruger Park and Western Cape, South Africa). The metals were purified by liquid chromatography on ion exchange resin. Metal isotope compositions were measured by high resolution multiple-collector inductively coupled plasma mass spectrometry. The Fe, Cu and Zn isotope differences between trophic levels are similar in both sites. However, local Cu and possibly Zn isotopic values of soils influence that of plants and of higher trophic levels. Between the plants and bones of herbivores, the Zn isotope compositions are significantly enriched in heavy Zn isotopes, whereas no trophic enrichment is observed for Fe and Cu. Between the bones of herbivores and bones of carnivores, the metal isotope compositions are  $^{56}\text{Fe}$ -depleted,  $^{65}\text{Cu}$ -enriched and slightly  $^{66}\text{Zn}$ -depleted. Given these results and using box model calculations, we assess the influence of diet on the Zn isotope composition of human bones. The data already suggest their significant potential as new paleo-dietary and paleoecological proxies.

### **E01.05: Paleodiet investigation of a 15th to 16th century AD cemetery site li Hamina in northern Finland**

by **Maria Lahtinen** (University of Durham, UK), **Rosa Vilkama** (University of Oulu, Finland)

The site li Hamina is located by the Gulf of Bothnia of the Baltic sea. The investigated cemetery site was used during the fifteenth and sixteenth centuries. According to very limited historical records, a mixed livelihood of agriculture, live stock husbandry, hunting and fishing was practised around the li. Teeth and mandibles were investigated using stable isotopes, and dental pathologies were documented.

Carbon and nitrogen isotopic ratios were measured successfully from 77 individuals. From selected individuals, also fine-scale samples from dentin were analysed. Animal bones from the area were investigated to create base line values. The results suggest that diet varied among the individuals and during each studied individual's lifetime. It was mainly based on fish and possible reindeer or seal consumption.

Palaeopathological analysis of the dental remains of li Hamina revealed that the deceased had suffered from several illnesses. Diet affects the development of caries, calculus and tooth loss, as well as to a lesser extent periodontitis. Findings from li Hamina lead us to suspect that the local diet was probably not carbohydrate based. Frequency and severity of carious lesions and calculus were modest, indicating more likely a protein based diet.

#### **E01.06: Reconstructing the diet of Italian people during Bronze Age: comparison of food patterns using stable isotope analysis**

by **Alessandra Varalli** (Université d'Aix-Marseille, France), **Gwenaëlle Goude** (Université d'Aix-Marseille, France), **Jacopo Moggi-Cecchi** (Università di Firenze, Italy)

The Bronze Age is a crucial period of change, when “non-organized” human groups give way to more structured and hierarchical communities, trade activities leads to new social relationships and agriculture and livestock farming become the key changes of new life habits. This progress is sustained by the introduction of new crops and improvements in the food production capacity. The variability of dietary patterns is one of the resultants of these modifications. Our paper presents dietary trends in Italy during Bronze Age (2300–1120 BC) evaluated through multi-element stable isotope analyses (C, N, S), measured on bone collagen. We present original data from 4 sites in 3 Italian regions (n=169), compared with previous results from 3 sites in central Italy (n=43). The results highlight different food choices due to the local environment, social complexity and probably different purposes of the area chosen for the necropolis. Presence of non-local individuals and first introduction of millet during Middle Bronze Age are discussed. At one site, the high level protein diet hints at marine food consumption for a few individuals. The different trends of dietary patterns emerging from the analysis will contribute to the comprehension of the evolution of food habits during the Bronze Age.

#### **E01.07: Quantitative reconstruction of individual Neolithic diets using a Bayesian framework**

by **Ricardo Fernandes** (Christian-Albrechts-Universität, Germany), **Olaf Nehlich** (Max Planck Institute for Evolutionary Anthropology, Germany), **Detlef Jantzen** (Mecklenburg-Vorpommern- Landesarchäologie und Landesdenkmalpflege, Germany), **Marie-Josée Nadeau** (Christian-Albrechts-Universität, Germany), **Pieter M. Grootes** (Christian-Albrechts-Universität, Germany)

Offering quantitative estimates on the intake of different food groups by individual humans from the analysis of their bones represents a sought-after research goal. This quantification would permit addressing important archaeological questions related with, for instance, resource access, social differentiation, shifts in dietary strategies, etc. In order to achieve truly quantitative dietary estimates an integrated research strategy is hereby proposed. The approach consists of four main points:

- Determination of the isotopic baseline.
- Use of multiple dietary isotopic proxies.
- Characterization of dietary routing.
- Use of a Bayesian mixing model.

A novel Bayesian model, FRUITS (Food Reconstruction Using Isotopically Transferred Signals), was developed with the capability of accounting for dietary routing. The advantages of Bayesian models include the incorporation of uncertainties in consumer and food groups’ isotopic signals, and variability in isotopic enrichment. Model outputs include confidence intervals for the relative intake of different food groups.

The described methodology was applied in the quantitative diet reconstruction of individuals recovered from the prehistoric cemetery of Ostorf (Germany). This case study is of particular interest given that the individuals, while having associated Funnelbeaker cultural markers, present bone isotopic values that suggest, to some extent, the adoption of hunter-gatherer dietary practices.

#### **E01.08: Intra-population variability in breastfeeding and weaning practices revealed by carbon and nitrogen stable isotope analysis: a case study of Great Moravian population (9th–10th century AD, Czech Republic)**

by **Sylva Kaupová** (Charles University in Prague, Czech Republic), **Estelle Herscher** (Aix-Marseille Université, France), **Petr Velemínský** (National Museum, Czech Republic), **Jaroslav Brůžek** (Université Bordeaux 1, France)

This communication demonstrates the benefits of the use of an intra-individual sampling strategy in isotopic investigation of infant diet. For this purpose, the example of Great Moravian population is used. After the description of methodology and the explanation of reasons for its use, we present results obtained from 41 infants, aged between 0,5-5 years and coming from Czech archaeological sites Mikulčice and Josefov, representing both urban and rural parts of concerned population.

The isotopic results attest a mosaic of food behaviors, which could not be revealed by applying a routinely used cross-sectional approach. In the urban sample, the first infants may have been weaned during their second year of life while

some others may have still been consuming breast milk substantially by the age of 4-5. On the other hand, data from the rural sample show one clear pattern of weaning, with a cessation of breastfeeding after the age of 2.

Placing the isotopic results against the archaeological, anthropological and palaeopathological data, several factors which may have been responsible for applied weaning practices are suggested. At a population level, observed variability in weaning practices did not affect the mortality and health status of urban children in comparison to the rural sample.

#### **E01.09: Calcium isotope analysis of dental enamel: a new approach for detecting mammal milk consumption and domestic animal management in the archaeological record**

by **Carrie Wright** (University of Oxford, UK), **Julia Lee-Thorp** (University of Oxford, UK)

Calcium isotope ratios ( $^{44}\text{Ca}/^{42}\text{Ca}$ ) have shown promise as a proxy for dairy consumption, but mass fractionation effects are small and previous studies have been based on bone. Calcium isotope values are highly changeable in bone due to homeostatic processes, greatly complicating the identification of milk in the diet. Here we describe a more controlled study to assess the effects of milk consumption on  $\delta^{44/42}\text{Ca}$  values in sequential samples of sheep dental enamel.

Modern sheep results show, firstly, a 0.41 to 0.49‰ depletion in  $^{44}\text{Ca}$  in milk relative to grass, demonstrating that milk is a dietary source of depleted calcium isotopes. Secondly, first and second molar samples from mature sheep show a significant mean difference, with first molars being consistently depleted in  $^{44}\text{Ca}$  by 0.18‰. These results are indicative of milk being the primary food during the first molar's development, and with weaning having occurred during the development of the second molar. Thirdly, the incremental results from molars of modern sheep provide an independent indication of the timing of weaning. Comparisons of different modern sheep management schedules to those from archaeological sites can indicate patterns of ancient weaning, and thus suggest whether ewes were managed for dairying purposes or not.

#### **E01.10: Extra-somatic means of digestion: milk, microbes and the human-microbe co-evolution**

by **Alisa Scheibner** (Freie Universität Berlin, Germany), **Eva Rosenstock** (Freie Universität Berlin, Germany)

The earliest evidence for milk-fat-residues dates back to the 2<sup>nd</sup> half of the 7<sup>th</sup> millennium BC in the Near East and to the 2<sup>nd</sup> half of the 6<sup>th</sup> millennium BC in Central Europe. But despite models that locate the responsible genetic change in the 6<sup>th</sup> millennium BC in Central Europe, the corresponding allele was rare or absent among 6<sup>th</sup> millennium farmers. Moreover, modern data suggests that lactase persistence never had particular significance in the Near East.

Here and in the time gap between the beginnings of milk use and the occurrence of lactase persistence, microbes provided a solution to lactose maldigestion: milk processed by lactic acid bacteria and yeasts can be consumed with greater ease due to the ability of these microbes to split lactose into digestible products like lactic acid and alcohol.

Although various types of fermented milk products exist in all parts of the Old World today, the microbes involved have not yet been the object of wider attention within archaeobiology, even though they are considered domesticates in modern microbiology. This presentation draws attention to the co-evolution between human milk use and microbes involved in milk processing, outlining possible ways to trace this co-evolution in multidisciplinary research.

#### **E01.11: Where is the milk? Investigation of 'specialized' vessel function from the Late Vinca Culture**

by **Marta Bartkowiak** (Adam Mickiewicz University, Poland)

Sherratt's famous theory called 'Secondary Products Revolution' indicates that exploitation of animals for secondary products (milk, wool, traction) had profound significance for socio-cultural transformation. Of particular importance in this model, is the use of milk and dairy products. Until recently, the main issue in examination of prehistoric dairying was to identify their indications in material culture. Thanks to a range of recently developed methods, especially organic residue analysis, the recognition of remains of milk production became possible. This paper aims to present the results of studies on identification of vessels involved in the processes of acquisition, preparation, storage and consumption of milk and dairy products from four Late Vinca settlements: Vinca Belo Brdo, Drenovac, Turska Cesma and Divostin from Central Serbia. This is achieved by the application of combined method strategies of investigating pot functions. It comprises complex examination of their morphological and technological attributes, ethnographic analogies, use-alteration analysis, organic residue analysis and careful examination of the sherd contexts.

### **E01.12: Earliest evidence for cheese making and specialisation of pottery use in the sixth millennium BC in Northern Europe**

by **Mélanie Salgue** (University of Bristol, UK), **Peter I. Bogucki** (Princeton University, USA), **Joanna Pyzel** (University of Gdańsk, Poland), **Iwona Sobkowiak-Tabaka** (Centre for Prehistoric and Medieval Research, Poland), **Ryszard Grygiel** (Museum of Archaeology and Ethnography in Łódź, Poland), **Marzena Szmyt** (Poznań Archaeological Museum, Poland), **Richard P. Evershed** (University of Bristol, UK)

The introduction of dairying was a critical step in early agriculture with milk products being rapidly adopted as a major component of the diets of prehistoric farmers and pottery-using late hunter-gatherers. Significantly, potsherds pierced with small holes appear at Early Neolithic sites in temperate Europe in the 6<sup>th</sup> millennium BC and have been interpreted typologically as ‘cheese-strainers’, although a direct association with milk processing has not yet been demonstrated. Here we apply an approach based on the  $\delta^{13}\text{C}$  and  $\Delta^{13}\text{C}$  values of the major fatty acids in animal fats preserved in pottery to investigate the function of sieve vessels and non-perforated vessels from Kuyavia (Poland). The cooking pots were largely used for processing ruminant carcass products, while the presence of beeswax in most of the bottles suggests a probable use of beeswax as a waterproofing agent. In contrast, the presence of abundant milk fat in the sieve vessels, comparable in form to modern cheese strainers, provides compelling evidence of the vessels having been used to separate fat-rich milk curds from the lactose-containing whey. This new evidence emphasises the importance of pottery vessels in processing dairy products, particularly in the manufacture of reduced-lactose milk products amongst lactose intolerant prehistoric farming communities.

### **E01.13: First results on the organic content of ceramic vessels from Neolithic sites of North-Western Russia**

by **Ekaterina Dolbunova** (The State Hermitage Museum, Russian Federation), **Arnaud Mazuy** (UMR 7264 UNS – CNRS. CEPAM, France), **Martine Regert** (UMR 7264 UNS – CNRS. CEPAM, France)

A series of 28 carbonised residues from different types of pottery dated to early-late Neolithic from Dnepr-Dvina region was treated. They were analysed by High Temperature Gas Chromatography (HT-GC) and by HT GC-Mass Spectrometry. Most of the samples were localised on the wall of the pots, and a few of them were collected from the bases and rims. All provided a significant amount of lipid, from 21 mg g<sup>-1</sup> to 2,545 mg g<sup>-1</sup> with an average of 437 mg g<sup>-1</sup>. In most cases, palmitic and stearic acids were the main compounds detected, but a variety of chromatographic profiles were observed. Furthermore, triacylglycerols (TAGs) were preserved in 15 samples, and comprised more than 10 % of the total lipid extract (TLE) in 6 of the samples. In one of the samples, TAGs comprised 41% of the TLE. The combination of these biomarkers with palmitic and stearic acids clearly indicates the consumption of animal fats. The distribution of triglycerides is rather narrow (from C46 or C48 to C54), which probably indicates subcutaneous animal fats. The presence of other sterols from vegetable origin is an interesting data that gives evidence for mixture of animal and vegetable fats, which shows that a variety of natural products were processed in the vessels.

### **E01.14: Food production and consumption in the Early Neolithic waterlogged site of la Draga (Iberian Peninsula): a biogeochemical approach to dietary preferences**

by **Maria Saña** (Autonomous University of Barcelona, Spain), **Antoni Rosell** (Autonomous University of Barcelona, Spain), **Àngel Bosch** (Museu Arqueològic Comarcal de Banyoles, Spain), **Ramon Buxó** (Museu d'Arqueologia de Catalunya, Spain), **Julia Chinchilla** (Escola Superior de Restauració de Béns Culturals de Catalunya, Spain), **Antoni Palomo** (Autonomous University of Barcelona, Spain), **Raquel Piqué** (Autonomous University of Barcelona, Spain), **Josep Tarrús** (Museu Arqueològic Comarcal de Banyoles, Spain), **Xavier Terradas** (CSIC, Spain)

The site of La Draga is located in the north-east of the Iberian Peninsula, in the central part of the eastern shore of Lake Banyoles, 170masl. Archaeological work began in 1990, and is currently the only Early Neolithic lakeshore site in the western Mediterranean being excavated. With a minimum surface area of 8000m<sup>2</sup>, an extension of about 800m<sup>2</sup> has been excavated. Two different Early Neolithic occupations have been documented with a timeline of 5430–4796 cal BC. In this presentation we will focus on the earliest occupation (5430 cal BC).

The waterlogged condition of the site facilitates an excellent preservation of biogeochemical record. A preliminary set of samples was studied using organic residue analysis to identify the nature of organic remains preserved in vessels and lithic implements. The results evidence the presence of animal and plant residues in a remarkably well-preserved state. Emphasis is placed on the earliest uses of pottery and dietary preferences of first farming communities in the western Mediterranean area; discussing the variability in food processing, early cooking techniques and food habits. Patterns in animal and plant resources management and exploitation are also evaluated in relation to food production and consumption.

#### **E01.15: Dental calculus: a record of Pre-pottery Neolithic diet and agriculture from Nemrik 9, Iraq**

by Linda Scott-Cummings (PaleoResearch Institute, USA)

Dental calculus traps a variety of remains in the mouth, from food to fibers to miscellaneous debris. Examination of calculus from teeth from eleven burials at Nemrik 9, a PPNA (8000–6000BC) cemetery located on a terrace of the Tigris River in Iraq, yielded pollen, starch, phytoliths, and fibers. Only small quantities of dental calculus were observed on teeth of the individuals recovered from the cemetery, suggesting good dental hygiene. Microscopic particles embedded in tooth calculus from these individuals were recovered and identified in search of evidence for agriculture. Starch, phytoliths, and pollen indicate consumption of cereals and other foods. Food processing activities, such as use of threshing sledges is suggested in the phytolith record through recovery of “cut” phytoliths. Woody fibers also were noted in one context, suggesting using teeth as the “third hand” when making basketry or otherwise working with woody tissues. Thus, this record of botanic remains recovered from human dental calculus addresses the presence of agriculture at this PPNA site, the use of threshing sledges to process the cereals, craft activities, and identifies some elements of the diet, providing an integrated record of daily life and diet.

#### **E01.16: Plant diet in Iron age and Medieval Lithuania: evidence from microfossils in dental calculus**

by Vaidotas Suncovas (Vilnius University, Lithuania)

**Main goals:** The main goal of this research was extraction and analysis of microfossils entrapped in human dental calculus from Lithuanian archaeological skeletal collections. Specific microfossil (starch and phytolith) morphological characteristics have been employed to identify the use of different plant types and infer palaeodietary reconstruction.

**Sample:** Lithuanian Iron age, Medieval and Post Medieval dental calculus samples ranging from various geographic locations and presumably different social backgrounds (urban and rural) were isolated from teeth and analyzed.

**Methods:** Extraction of microfossils was carried out using established methods by either pulverizing calculus samples or dissolving them in 10% hydrochloric acid, and examined under a light microscope in cross polarized light.

**Results:** Although not all of the samples resulted in microfossil recovery, the majority of them produced starch grains consistent with wheat, barley, millet, legumes and other possibly diagnostic grains. Some grains are modified and could be potentially attributed to different past cooking practices.

**Conclusions:** This analysis has a considerable potential for gaining indicative knowledge of individual or even communal diet. It does not only correspond with, but also expands available archaeobotanical data.

#### **E01.17: Sea sick: development of a proteomic biomarker for scurvy in the bone collagen of early seafarers**

by Hannah Koon (University of Bradford, UK)

By some estimates, scurvy killed or debilitated millions of early sailors prior to the discovery and subsequent recognition that vitamin C could ward off the deficiency disease. But the true extent of this scourge to sea-farers is difficult to prove because only the most severe and prolonged cases would produce pathological lesions on the adult skeleton. To complicate matters further many of the lesions that have been observed on archaeological specimens bear striking similarities to other metabolic disorders such as rickets and anemia.

This paper describes a new way to detect scurvy by focusing on collagen, the most abundant protein in the human body and the molecule at the heart of scurvy. Evidence of sub-clinical scurvy is determined from hydroxylation levels in bone collagen using peptide mass fingerprinting. The advantage of this high-throughput mass-spectrometric approach is that not only is it able to detect sub-clinical levels of scurvy, it only requires very small samples of bone collagen (>0.01mg) and is therefore minimally destructive.

#### **POSTERS**

##### **E01.01-P-4: Has the Gallic cooking got pots of pots? Finding the function of ceramics used for cooking: the example of Port-Blanc (Hoëdic, Morbihan, France).**

by Charlotte Choisy-Guillou (Université de Bretagne Sud, France), Marie-Yvane Daire (CNRS, UMR 6566, France)

Cuisine and diet are usually considered as a reflection of societies. People can be placed in a social and symbolic system; therefore, diet participates in their cultural identity. These questions are currently dealt with in a PhD project, focused on ceramics produced during the Iron Age in western Gaul.

A multidisciplinary approach is used, based on shape/use, traceological, physical and chemical analyses. The first step, morphometrical analysis, aims to define wide functional ranges used for cooking. The second stage, traceological observations, allows, not only to do a close up on these ranges, but also provides supplementary information about using modes such as hanging positions or pottery position above the hearth. The last approach retightens the aforementioned ranges, giving clues about dietary habits.

This methodology is here presented through the study of the Port-Blanc pottery assemblage. The first results have shown that the protocol, combining the three approaches, is valid. Moreover, some dietary data have been identified (evidence of salt use, boiling leafy vegetables and beef meat) suggesting culinary tracks for those populations.

#### **E01.02-P-4: Preliminary results of the isotope analysis of bone remains of the pre-Mongolian urban and rural population of Medieval Central Russia**

by *Asya Engovatova* (Institute of Archaeology RAS, Russian Federation), *Ganna Zaitseva* (Institute for the History of Material Culture of the Russian Academy of Sciences, Russian Federation), *Mariya Dobrovolskaya* (Institute of Archaeology RAS, Russian Federation), *Eugeniy Bogomolov* (Federal state unitary enterprise «A.P. Karpinsky Russian Geological Research Institute», Russian Federation)

Excavations of collective burials of the pre-Mongolian urban population of the Yaroslavl city and synchronous cemeteries pertaining to rural settlements in Central Russia have yielded numerous samples of human bones.

An analysis of the nitrogen and carbon isotopes content ( $^{15}\text{N}$  and  $^{13}\text{C}$ ) in 100 samples taken from graves of city dwellers was carried out. Based on this analysis we succeeded in evaluating the diet of the population of Medieval Yaroslavl in the early 13<sup>th</sup> century. Standard diet was characterized by a high share of animal proteins, notably the meat-and-milk component. Values of the nitrogen and carbon isotopes content in the bones of the urban population were confronted to those on 15 individuals buried in synchronous cemeteries pertaining to small rural settlements. Values for the rural population differ spectacularly from those from the city of Yaroslavl, primarily in low indexes of heavy nitrogen indicative of mainly vegetable diet. More pronounced gender distinctions and a higher individual variability in diet were also observed to be characteristic of village dwellers.

The strontium isotope content ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) for 48 individuals was analysed in order to differentiate local and newly arrived individuals among the population of the Yaroslavl city in the early 13<sup>th</sup> century.

#### **E01.03-P-4: Milk production during the late 5th millennium at P. Bordsusani, Romania; a complementary study using mortality profile and stable isotopic analysis ( $\delta^{13}\text{C}$ , $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$ ) of cattle dental remains**

by *Rosalind Gillis* (CNRS-MNHN, UMR 7209, Archaeozoology, archaeobotany,, France), *Stéphanie Bréhard* (CNRS-MNHN, UMR 7209, Archaeozoology, archaeobotany,, France), *Adrian Bălăşescu* (National History Museum of Romania, Romania), *Joël Ughetto-Morfrin* (CNRS-MNHN, UMR 7209, Archaeozoology, archaeobotany,, France), *Dragomir Popovici* (National History Museum of Romania, Romania), *Jean-Denis Vigne* (CNRS-MNHN, UMR 7209, Archaeozoology, archaeobotany,, France), *Marie Balasse* (CNRS-MNHN, UMR 7209, Archaeozoology, archaeobotany,, France)

Popina Bordsusani (P. Bordsusani), situated on a river terrace near the present village of Bordsusani, is a tell site from the Gumelnita culture, dated to the second half of the 5<sup>th</sup> millennium BC. The cattle mortality profile suggests husbandry practices were focused towards prime meat exploitation and dairy production highlighted by a 'post-lactation' slaughter of calves. We undertook a stable isotopic analysis of dental remains to investigate weaning practices. The  $\delta^{15}\text{N}$  results show that the calves within the 'post-lactation' peak were well-advanced in the weaning process. This suggests that the slaughter may have been delayed until the end of the cows' lactation, in agreement with the dairy husbandry hypothesis. The isotopic analysis ( $\delta^{13}\text{C}$ ,  $\delta^{15}\text{N}$  and  $\delta^{18}\text{O}$ ) together with the mortality profile, presents an interesting story of cattle herding practices for dairying in Romania during the 5<sup>th</sup> millennium BC.

#### **E01.04-P-4: Dietary variability and stable isotope analyses: looking for variables within the Late Neolithic and Iron Age human groups from Gougenheim site and surroundings (Alsace, France)**

by *Gwenaëlle Goude* (UMR 7269 LAMPEA, Aix-Marseille Université – CNRS – MCC, France), *Adrian Balasescu* (National History Museum of Romania/INRAP France, Romania), *Hélène Reveillas* (INRAP Grand Est Sud / UMR 5199 PACEA Bordeaux, France), *Yohann Thomas* (INRAP Grand Est Sud, France), *Philippe Lefranc* (INRAP Grand Est Sud, France)

This work presents the first diachronic isotopic results on palaeodiet in northeastern France. Due to its exceptional archaeological characteristics (human deposits in pits with various positions), the study of the bone collection from the site of Gougenheim and surroundings (Late Neolithic-Iron Age, Alsace, France) appeared to be a great occasion to bring

new data on diet and potential relationship with social elements or other factors taking part in food choices. In order to get individual palaeodietary information (ie. protein consumed), carbon and nitrogen stable isotope analyses were performed on 24 adult and 19 immature human bone collagen as well as on 20 animal remains. For the Late Neolithic period, isotopic values show, among other things, a wide  $\delta^{13}\text{C}$  range within the female human group, statistically lower than the male one. A diversity of food sources was probably consumed among women and one could suspect residential mobility. Although body deposits highlight two distinct subgroups, no relationship with animal protein intake was found. Moreover, the comparison with Iron Age individuals puts in evidence either clear different dietary patterns between the two periods or drastic environmental changes through time affecting stable isotope values. The study was supported by INRAP.

#### **E01.05-P-4: New method for determining food remains on archaeological pottery**

by Jaroslav Pavelka (University of West Bohemia, Czech Republic)

The method for identification of particular food proteins is based on the reaction between protein and antibody. Unlike the earlier analyses, this reaction is calibrated on the denaturated (carbonized or dried) food proteins. We can analyze not only recent food, but also ancient food remains preserved on archaeological pottery. The method was successfully validated on 60 samples from Neolithic, Chalcolithic, Hallstatt and Early Middle Age periods from Czech Republic. Most of our results come from the Late Middle Age period. Commercial tests for analyses of protein allergens in cooked food were used for detection of the food remains. The method is quick, relatively cheap and can be used either separately or in combination with other methods e. g. mass spectrometry. We are able to determine cereals, milk, egg white, beef, pork, poultry, lamb proteins, crustaceans, and almond. Moreover, we are able to differentiate between goat and cow milk. The determination of different types of milk by other methods is sometimes problematic (namely Gas Chromatography-Mass Spectrometry or Atmospheric Pressure Chemical Ionisation). The routine application of our method can help understand alimentation in geographically and temporally different cultures. The immunodetection method could also contribute to the reconstruction of environmental conditions in past times.

## Session E02

### Meat as food, offering and identity

Thursday, 5 September 2013, 14:00–18:30

Room: EU 108 (Building 1, ground floor)

**Organisers:** Ladislav Rytíř (Archeo Pro o.p.s. – Archaeological Public Service Company, Czech Republic) and Branislav Kovár (Institute of Archaeology of Slovak Academy of Sciences, Slovakia)

Meat is an important part of human diet. In many periods of the past meat was valued not only for its high nutrition value but also as a symbol of wealth and social status. The consumption of meat was indicative of the social elite and it often occurred also as an offering in burial contexts. There are for example funerary feasts of the Hallstatt Period aristocracy or the much earlier meat dishes in the burial contexts of the Corded Ware and Bell Beaker population. The choice of animal species and cut of meat, the mode of its cooking and serving may also be one of the important signs of communal, regional and ethnic and gender identity. Meat was also important object of exchange and trade. Frequently, during the Prehistory and Middle Ages a specific meat consumption or its taboo was used as an important symbol of differences between communities and religious groups. The funerary and domestic evidence of meat consumption is essential for understanding the methods of animal husbandry, as well as symbolic significance of different species and types of meat for social relations of its consumers. In this session we are going to discuss the changing context of production, choice, butcher practices, preparation, consumption and deposition of different kinds of meat from the Prehistory to the Modern Era. Particular attention will be paid to the meat offerings in Prehistoric burial contexts and their social, ritual and identity significance.

#### E02.01: Social hierarchy and food: the role of meat.

by *Krish Seetah* (Stanford University, USA)

In contrast to inanimate lithics, ceramics or metal finds, faunal specialists study a material source that is transformed conceptually and biologically before becoming part of the lithosphere, interacting with the human world in a completely different way prior to this process. A surprising number of those characteristics that define us as human are either mirrored in the way animals are viewed and treated, or employ animals in their expression. One of these characteristics is social stratification, which is, in one form or another, universal.

Focusing specifically on recent ethnographic and actualistic research with the Maasai, but also integrating broader archaeo-historic contexts, this presentation highlights some of the less obvious, yet no less compelling roles that meat has played in cultures past and present. In particular, the presentation centres on the manner in which carcass divisions and portioning, as well as sharing and cuisine, can be critical exemplars of social division and mechanisms for maintaining stratification.

#### E02.02: “Never desire to take your neighbour’s household...”

by *Péter Csippán* (Eötvös Loránd University, Hungary)

Polgár–Csőszhalom is a very complex, multiple occupation site. This special site dated to the 5th millennium BC is composed of two different topographic units: a tell settlement and the horizontal settlement. In our interpretation the two formed an enclosure system, which functioned as a complex whole. During our research we revisited and reinterpreted some of the excavated data in a special framework based on the concept of the household. The households, as basic social and economic units, may be interpreted by the place of dwelling and their closely connected features: pits, graves, post-holes etc.

This paper is the comparison between the meat-eating patterns of two coeval households. These households are in the form of two huge pit-complexes, their meat consumption being represented by the animal bones from their features. More than two thousand animal bones came to light from these features, but their taxonomic and anatomical distributions were not the same.

Although the comparison seems easy, the method has two possible aspects: qualitative and quantitative. Reconciling the two is the most plausible method recommended for comparing the meat-eating customs of these Neolithic households. Through the mirror of animal remains we can demonstrate differences between the meat consumption habits of these prehistoric neighbourhoods.



### **E02.03: The social importance of meat in the Irish Neolithic: the evidence from stable isotopes**

by **Jessica Smyth** (University of Bristol, UK), **Richard Evershed** (University of Bristol, UK)

The analysis of faunal remains from archaeological sites is undoubtedly one of the key investigative techniques in assessing how meat was consumed and used in the past, but what do you do when faunal remains are poorly preserved? This is the case for many prehistoric and later sites in Ireland, where acidic soils severely degrade most human and animal bone assemblages. Fortunately, such an acidic environment ensures excellent preservation of the ancient meat and milk lipids of animals, as well as other lipids, which survive in the pottery vessels used to process and cook them. Molecular and stable isotope analyses of these lipids are thus providing a very valuable proxy for the use of meat in prehistory.

This paper details the results of a systematic programme of lipid analysis on pottery assemblages from a range of Irish Neolithic sites, from Early Neolithic houses to Late Neolithic ceremonial complexes, and discusses the evidence for the changing role of meat in society through this period.

### **E02.04: Bovine heads, death ritual, and social competition in Neolithic Sardinia: reinterpreting the bucranium motifs in the 'domus de janas' rock-cut tombs**

by **Guillaume Robin** (University of Cambridge, UK)

Neolithic Sardinia (Italy) is well known for its spectacular multi-chambered rock-cut tombs, locally called 'domus de janas' (house of the fairies). A hundred of these tombs have walls decorated with sculpted and painted bucrania. This bullhead motif shows a great typological diversity, from large schematic horns several meters long to realistic natural-size bullheads repeatedly sculpted on different parts of the walls. Sardinian bucrania have been generally regarded as religious in nature and interpreted as representations of a same 'Bull God' connected with death rituals. This paper proposes a very different interpretation of these motifs, resulting from a recent reassessment of Sardinian Neolithic tomb art and a review of ethnographic evidences of use of bullhead imagery in burial practices (in Madagascar, North-east India, and Eastern Indonesia). I will argue that bucrania in Sardinian tombs were more likely created to symbolise bovines that were slaughtered during funerary feasts, and that the primary function of these motifs was to commemorate the wealth and ability of the tombs' owners to bring together a large number of people and to feed them with meat during such ritual events.

### **E02.05: Perinatal animal remains from ritual contexts in Italian Bronze Age caves**

by **Letizia Silvestri** (Durham University, UK), **Mario Federico Rolfo** (Università di Roma 'Tor Vergata', Italy), **Leonardo Salari** (Università di Roma 'Sapienza', Italy)

The nature of Italian cave rituals in later prehistory has been long debated. Nevertheless, animal sacrifices and meat offerings have not been fully explored so far; yet, a wide range of information about the ritual participants and their communities can be gathered from these customs.

Bronze Age cave deposits in Central and Southern Italy recurrently contain perinatal animal bones belonging to domestic species. These can be interpreted as meat sacrifices, and imply a loss in strictly economic terms for the officiants. But what was the social meaning of such intentional privations?

This paper will discuss meat offerings from burial and non-burial caves in the Italian Bronze Age by integrating two key methods:

- 1) Zooarchaeological science, with a focus on determination of species, MNI, age classes and frequency of skeletal elements; these techniques are applied in particular to the analytical data from Mora Cavorso Cave in Latium;
- 2) Contextualization and interpretation, also involving the use of Classical texts and ethnographical examples, aimed at understanding the reasons and social implications for such ritual choices.

By this critical and multi-layered synthesis, this paper intends to provide an effective means to improve our understanding of identities and symbolisms of Italian Bronze Age communities.

#### **E02.06: Millet and barley beer Ovens, Bronze and Iron Ages in France?**

by **Philippe Marinval** (CNRS, France), **Laurent Bouby** (CNRS, France), **Jean Coulon** (Université Lyon, France), **Mireille Cherubini** (Taberna Romana, France)

Several Bronze and Iron Ages sites, especially in France, deliver remains of a specific kiln type. Among the particularities of these clay buildings one can mention a perforated clay slab with numerous holes, a round plan, a bell shaped lid, modest proportions, surprisingly thin walls and a modular and portable design. Considering some of these morphological specifications, they are frequently interpreted as pottery kilns, like the one discovered in Sévrier (Bronze Age XII/IXth c. BC) (Lake Annecy, Haute-Savoie, France) (Bocquet and Couren 1975). The recent review of such findings (Coulon 2012) and the study of an Iron Age kiln found in Oppidum of Roquepertuse (Vth c. BC)(Velaux, Bouches-du-Rhône, France) (Bouby *et al.*, 2011) led us to reinterpret these structures. Frequent and close associations with charred millet (*Setaria italica*) (Eastern France) and barley sprouted grain (*Hordeum vulgare*) (Roquepertuse) indicate that these structures were certainly involved in food preparation and possible beer-making process. In this communication, we will develop a model related to European Protohistoric millet brewing techniques (*Setaria italica* and *Panicum miliceum*) and we present our own brewing experiments.

#### **E02.07: Upstairs – Downstairs in an Iron Age capital: Meals and others from the Palatial complex and Cappadocia Gate at Kerkenes, Turkey**

by **Evanğelia Pişkin** (Middle East Technical University, Turkey)

The site of Kerkenes, Yozgat, Turkey is a highland fortified city of 2.5 sq km, the size of what could be called “a capital”. The site was short lived, established at around the mid 7<sup>th</sup> century BC and totally destroyed by fire about 100 years later, never to be rebuilt. It has been proposed that the city was Pteria, mentioned by Herodotus. Animal bones recovered from the Palace and Cappadocia Gate, one of the monumental entrances to the city, showed marked differences in meat consumption of both domestic and hunted animals. Striking is the recovery of dolphin bones from the Palace ruins, given that the closest to the city sea is about 300 km away. The recovery of “closed” contexts enabled the identification of possibly single events of consumption. In addition, contexts dominated by skull fragments suggest the possible use of them as part of the city’s ideology.

#### **E02.08: The rich and the Holy Order: Giving into temptation? Using Modern Technology to see behind the curtain of an Austrian late middle age Monastery**

by **Konstantina Saliari** (Institut für Ur und Frühgeschichte Wien (University of Vienna), Austria), **Guenther Karl Kunst** (Institut für Palaeontologie, Austria)

“...the food in our priories should everywhere be without flesh meat...” is written in the “Holy Rule” of the Dominican Order.

Excavations at a Dominican monastery in Tulln (Austria) brought to light a respectable number of animal bones deposited within an abandoned heating chamber, allowing for the excellent preservation of the material. The examination of the bones showed that the remains probably depict a single event, related to consumption. The present study investigates the cooking preparation and butchery practices by applying an innovative non destructive methodology, based on modern technology. The research focuses mainly on morphological observations associated with cut marks and chop marks, fracture types and recurring patterns.

The analysis of the material is divided into two parts focusing on: a) the species’ representation and their biological profile, the anatomical elements and the taphonomical deformations observed, as well as on b) the profile and the anatomical distribution of butchering implements and their signature on bones studied. The well preserved remains from Medieval Tulln offer the unique opportunity to explore the socio-economic status and the communal identity through the dietary choices and practices.

#### **E02.09: Changes of consumption of cattle meat in Vilnius Lower Castle during 14th-17th centuries**

by **Giedrė Piličiauskienė** (National Museum of Lithuania, Lithuania)

The aim of this paper is to compare sex and age structure of cattle found in the territory of Vilnius Lower Castle during the period of the 14<sup>th</sup>–17<sup>th</sup> centuries and try to explain breeding changes from historical perspective. Overall 4000 cattle bones dating to 14<sup>th</sup>–17<sup>th</sup> centuries were analyzed. The osteological material has been collected during an excavation of 1988–2003. Significant differences ( $p < 0.05$ ) in cattle sex as well as age structure were estimated in 14<sup>th</sup>–15<sup>th</sup> and 16<sup>th</sup>–17<sup>th</sup> centuries. That could be explained in accordance to a particular historical background of the Grand Duchy of Lithuania and its largest town.

## POSTERS

### **E02.01-P-1: Meat Consumption during Medieval Times: Case Study of Soroca Fortress (Republic of Moldova)**

by **Luminita Bejenaru** ('Alexandru Ioan Cuza' University, Romania), **Sergiu Musteata** ('Ion Creanga' State Pedagogical University, Republic of Moldova)

Soroca is known as one of medieval border fortress placed on the Easter border of the Moldovan state. The fortress was involved in various military conflicts during 16-18 centuries. The recent and 1950-1960's excavations show different stages of its development.

Animal remains discovered in the 2012 archaeological campaign, at Soroca Fortress, are described in terms of quantification (frequencies based on the NISP – number of identified specimens, and the MNI – minimum number of individuals), aging and taphonomy. Among the consumed animals, domestic species constitute the majority – about 67% NISP (cattle, sheep/goat, pig, and hen). The wild species are less represented (about 8% NISP), but they are relative divers (roe deer, wild boar, hare, wild birds, fish, and shells).

During the Middle Ages in Soroca Fortress, the meat consumption seem to have, according the archaeozoological data, specific patterns for different ethnic and religious groups that lived in.

This work was supported by a grant of the Romanian National Authority for Scientific Research, CNCS – UEFISCDI, project number PN-II-RU-TE-2011-3-0146.

### **E02.02-P-1: A slice of veal with your stale bread? Faunal remains from the 18th century latrine at the abbey of Clairefontaine (south-eastern Belgium)**

by **Quentin Goffette** (Royal Belgian Institute of Natural Sciences, Belgium), **Mona Court-Picon** (Royal Belgian Institute of Natural Sciences, Belgium), **Sidonie Preiss** (Royal Belgian Institute of Natural Sciences, Belgium), **Davy Herremans** (Ghent University, Belgium), **Isabelle Bernard** (NPO d'Millen, Luxembourg)

Analysis of faunal remains coming from archaeological contexts of abbeys have been carried out in several European countries. In Belgium, although such studies are available for the north of the country (Flanders), they are still lacking for the southern part (Wallonia). The study of animal bones unearthed in the Cistercian nunnery of Clairefontaine (1247-1794) helps to fill this gap. Here, we focus on the 18th century latrine in which animal remains were collected by hand. In addition, samples were taken in the filling of the structure for a total of 80 liters of sediments and were wet sieved to recover the small bone fragments. The information gathered during the faunal analysis are presented and then compared with historical sources, especially the account books of the abbey, to provide a more accurate insight into the diet of the sisters. It appears that consumption of meat was not uncommon. The relative diversity of foods consumed and some unusual findings are indicative of the high status of the abbey of Clairefontaine, which is also revealed by plant remains and material culture.

### **E02.03-P-1: Butchering practice from Old Town Barilović (central Croatia) from Late Medieval and Modern Ages**

by **Dora Novak** (Faculty of Veterinary Medicine University of Zagreb, Croatia), **Tajana Trbojević Vukičević** (Faculty of Veterinary Medicine University of Zagreb, Croatia), **Ana Azinović Bebek** (Croatian Conservation Institute, Croatia), **Vesna Gjurčević Kantura** (Faculty of Veterinary Medicine University of Zagreb, Croatia)

Old Town Barilović is located on a hill above the river Korana, fifteen kilometres southwest from Karlovac, in central Croatia. On the external side of the 15<sup>th</sup> century yard, layer with a large number of animal bones and other refuse was found, dates from 15<sup>th</sup> till 18<sup>th</sup> century.

Analysed material contains about 5.850 bones, teeth and horns/antlers of animals of which 2.506 fragments (42.84%) were determined. Majority (96.61%) of skeletically and taxonomically determined fragments belong to mammals. NISP and MNI among mammal species was the highest for cattle: %NISP value equalled 61.5% and MNI equalled 38. Small ruminants and pigs had lower NISP and MNI values. Sexually mature individuals were predominant with cattle and small ruminants, while with pigs 12 to 18 months old individuals were predominant.

Cut marks are visible on numerous bones. Shape of those cut marks indicates that they were made with sharp metal tools and as a result of primary and secondary butchering. Traces of cutting carcasses in half are visible on almost all bovine vertebrae, which were cut medially or paramedially, while the cut marks of various lengths and depths, frequently appear on the caudal edge of the ramus mandibulae, a few centimeters ventrally of processus condylaris.

#### **E02.04-P-1: Funerary offerings from the necropolis of Narde II (Veneto, Italy)**

by **Ursula Thun Hohenstein** (University of Ferrara, Italy), **Marco Bertolini** (University of Ferrara, Italy)

In 2004, the burial area of Narde II was discovered during the excavation of a new channel for methane pipeline in the countryside south of Fratta Polesine (Rovigo, Italy). In the same area the Bronze Age settlement of Frattesina during the 60s of the last century and two other necropolis (Narde I and Fondo Zanotto), were discovered. 240 tombs, mostly in cremation, have been recovered. All the burials have been dated on the basis of the grave goods from one ancient phase of the Late Bronze Age and the early Iron Age. Some faunal remains were found inside the necropolis and are probably connected with funeral rituals. Most of the remains discovered in the area were probably used for the funeral pyre. Domestic animals were predominant over the wild ones that are only represented by red deer antler fragments. The presence of various skeletal portions suggests that different types of funeral rituals had taken place in the necropolis.

#### **E02.05-P-1: Dietary Habits at Vrbovec Castle in NW Croatia: Archaeozoological Evidence**

by **Tatjana Tkalčec** (Institute of Archaeology, Croatia), **Tajana Trbojević Vukičević** (Faculty of Veterinary Medicine at University of Zagreb, Croatia)

The castle of Vrbovec lies on a steep slope offering a splendid view of the Sutla river valley, in the village Klenovec Humski in very northwestern part of Croatia. Vrbovec Castle is directly or indirectly mentioned in historical sources in the period between 1267 and 1497. Archaeological excavations point to an even earlier time of its erection, i.e. the very end of the 12<sup>th</sup> century, and to an even longer continuity of its use until the mid 16<sup>th</sup> cent. The polygonal layout of the Romanesque castle has been preserved only at foundation level and in the lower portions of walls of ground-floor rooms. An archaeozoological analysis was carried out on the faunal remains from the stratigraphically excavated layers. The sample consists of a total of around 6850 fragments of bones, teeth and horns, which were determined as mammals (*Mammalia*), birds (*Aves*) and fish (*Pisces*). Butchery marks are visible on bones of primarily domestic species. Bone remains were also used in different purposes. The poster presents interesting picture on the diet of the inhabitants of the castle through 350 years of its existence.

## Session E03

### Medieval and early modern glass as seen through the context of dining

Friday, 6 September 2013, 14:00–18:30

Room: EU 108 (Building 1, ground floor)

**Organisers:** Georg Haggren (University of Helsinki, Finland), Hedvika Sedláčková (Archaia Brno, o.p.s., Czech Republic) and Hugh Willmott (University of Sheffield, UK)

In the 21st century glass is one of the most common materials we all use. Glass vessels, bottles and other items made of glass, as well as the windows around us, are an inseparable part of our material culture. This has not always been the case. Until recently, scholars treated glass as more or less a luxury item not only in the Middle Ages but up until the 16th and 17th centuries. However, this impression based on written sources has recently been challenged by the continuously growing archaeological material, not only from noble and urban sites, but from rural environment too.

The aim of this session is to analyse the affordability, distribution, and consumption of glass vessels in the context of material culture and dining. The production of glass was concentrated in certain areas such as mountainous regions in Bohemia (Czech Republic) and in Hesse (Germany) as well as cities like Venice and Antwerp. From these centres glass was exported over vast areas and beginning from the 16th century to overseas colonies on other continents too. Through glass vessels and material culture it is possible to analyse trade and commercial networks reaching every corner of Europe.

Literally looking through glass it is possible to analyse the dining culture and table manners and also to interpret the hidden values and symbolism behind elegant goblets, fancy glasses and humble beakers, all representing “things” of great fragility. Contrary to for example metal vessels, the resources spent on glass items were lost totally when they were broken. Shards of glass reflect conspicuous consumption better than any other material.

This session shall gather recent research on medieval and early modern material culture, and glass in particular. Papers from all parts of Europe (and beyond) are welcome to contribute to this discussion.

#### **E03.01: Beer and Belonging: Constructing identity through drinking glasses in the 17th-century Dutch Republic**

by Claire Finn (*The University of Sheffield, UK*)

During the 17th century, the newly formed Dutch Republic occupied a unique role. Long-distance trade and growing wealth promoted artistic, scientific and social advancement, and cemented the Republic's position on the world stage. The country's international contacts, large immigrant population and political upheaval all produced an insecure society attempting to form and promote new identities, and to find a place within the nascent concept of 'Dutchness'.

Material Culture provided a vital tool in the formation and communication of these new identities: at a personal, provincial and republic-wide level. This can be particularly seen in the conspicuous consumption of glass drinking vessels. The transformation of utilitarian vessels into high status items, affected by a swift turnover of styles and fashions, offers clues into understanding the relationship of the Dutch household with their material world; particularly where drinking artefacts were strongly tied into hospitality, gift giving, alcohol consumption and identity construction.

On-going research at the University of Sheffield is investigating 17<sup>th</sup>-century vessels excavated from domestic cesspits in several Dutch cities, in order to recognise consumption patterns in drinking glass use and identify the extent to which the choice in drinking glass reflects various aspects of the households' social identity.

#### **E03.02: From the cupboard to the bin: Production, use and consumption of glass tableware in the former Duchy of Brabant in the early modern period**

by Danielle Caluwé (*Free University Brussels, Belgium*)

In this paper the functionality of glass tableware of the former duchy of Brabant, in the Netherlands, will be discussed. Aspects of production, use and distribution of the typical range of the 16th–17th century Antwerp production will be analyzed, on the basis of archaeological finds in a wider region. Furthermore, the consumption of luxury and more common glass vessels and tableware will be presented in conjunction with probate inventories in order to investigate the use and the consumption of glass dining ware during the Early Modern Period in the region. An attempt is also made to explain the relation between design, form and function of glass vessels in comparison with other materials used for tableware. Historians have remarked that the distribution of new products in wider social groups can alter the meaning of the objects in question, and an attempt is made to investigate the wider meaning and use of archaeological luxury glass tableware. Finally, the archaeological glass tableware is considered in a broader context of material culture in the early modern period.

### **E03.03: Renaissance Table Glass from Brno, Bratislava and Vienna (South Moravia, West Slovakia/Hungary and Low Austria)**

by Hedvika Sedláčková (Archaea Brno o.p.s., Czech Republic), Kinga Tarcsay (Stadtarchäologie Wien, Austria)

This paper documents finds of Renaissance Glass in the Central Danube Region, which after 1526 became united under the rule of the Austrian Habsburgs. This has been undertaken using the examples from the three most important towns in this region, which represent the area's dependence on the economical and political situation.

The best quality glass came from Bratislava, the capital of the Hungarian kingdom after 1536. In the refuse pits of the nobility and patricians were series of possible Venetian vessels, glass made in Innsbruck, and some from Schwarzwald.

During the 30-years war, Brno was losing its economical and political power, and the glass from local glasshouses was rather poor, and little difference can be seen between the table-glass from houses of nobility and craftsman. Better quality glass was used in other Moravian towns, such as Olomouc and Opava.

In Vienna the majority of glass groups derive from very prominent sites, while more ordinary households were not examined. Thus there exists no representative cross-section of the glass used at that time. Amongst the available material there is a large range of vessels of better quality glass, many presumably made locally, although glass that is definitely of Venetian origin is rare.

### **E03.04: Dining glass in the Early Modern Period at the Prague Castle and Hradčany (Prague, Czech Republic)**

by Katarína Chlustíková (Institute of Archaeology of the Academy of Sciences of the Czech Republic, Czech Republic), Gabriela Blažková (Institute of Archaeology of the Academy of Sciences of the Czech Republic, Czech Republic), Jana Vepřeková (Institute of Archaeology of the Academy of Sciences of the Czech Republic, Czech Republic), Šárka Jonášová (Institute of Chemical Technology, Czech Republic), Zuzana Čílová (Institute of Chemical Technology, Czech Republic)

The paper focuses on a comparison of the proportions and distributions of both luxury and ordinary glass vessels within the assemblages of glass finds obtained from selected cesspits in the area of the Prague Castle, as well as the noble palaces at Hradčany dating to the Early Modern Period. The presentation of the results of new chemical analyses conducted on selected glass vessels forms an integral part of this paper. These results are set in a broader historical context, and shed some new light on the provenance of glass production in 17<sup>th</sup> century Bohemia.

### **E03.05: Glitter from peasants' tables – Glass beakers from medieval and early modern rural settlement sites in Finland**

by Georg Haggren (University of Helsinki, Finland), Elna Terävä (University of Helsinki, Finland)

Glass vessels are often interpreted as prestige finds during the discussion of medieval and early modern sites, with most of the medieval table glass finds originate from castles and town centres. However, recent excavations on deserted medieval villages (for example Mankby in Espoo) and other rural sites in Finland have often yielded shards of glass vessels. These includes pieces from beakers dating to the 14th and 15th centuries and made in the Bohemian tradition, as well as so-called forest glass from the early 16th century.

The early modern finds of vessel glass reflect beer drinking, and the expanding use of distilled spirits such as vodka. In some cases there are shards of typical wine glasses too. These new medieval finds indicate how the peasants during the Middle Ages tried to follow the Hanseatic material culture typical of the urban households. Likewise, in the early modern era the wealthy peasants of the far north can be seen to be attempting to emulate West European ways of consumption and manners.

### **E03.06: Early modern glass tableware in North America: the specific context of the first Basque whaling stations**

by Agnès Gelé (Université Laval, Canada)

Certain kinds of artefacts, such as several types of coarse earthenware and glassware recovered on colonial or fishing European sites, appear on almost all the Basque sites found in Canada. These basic categories of material culture would seem to provide an ideal opportunity to reconstruct the identity of the Basques fishermen. In order to demonstrate this, examination of the tableware found in the context of Basque whaling stations of 16<sup>th</sup> Century in Labrador is undertaken in this paper. This glassware study not only provides information about Basque supply networks and their place within wider maritime capitalism, but also food manners and social hierarchy, informing us about the context of dining at these specific sites.

### **E03.07: Alcohol, trade and indigenous people in the north – historical archaeology of colonialism**

by **Timo Ylimaunu** (University of Oulu, Finland), **Ritva Kylli** (University of Oulu, Finland), **Paul R. Mullins** (Indiana University-Purdue University Indianapolis, USA), **Titta Kallio-Seppä** (University of Oulu, Finland)

The town of Tornio was a central place for the Lapland trade during the 18th and 19th centuries. Archaeological and historical data indicate that alcohol was one main exported items traded to the indigenous Sámi people in the Tornio Lapland. This evidence shows that not only were some merchants of Tornio wealthy but also some craftsmen, such as copper smiths, had substantial sums of wealth. Archaeological finds from the site of one copper smith have yielded bottle glass and probate records show that he owned drinking glass. In our paper we will discuss the place that alcohol had in the process of cumulating the wealth among residents of Tornio. We will also consider the role of alcohol played more generally in trade from a colonial perspective, also examining how the Sámis responded to this exchange.

### **E03.08: Medieval glass in Lödöse, Sweden**

by **Anna Ihr** (Gothenburg University, Sweden)

As a part of a doctoral study, chemical analysis of glassy and vitreous material from Lödöse has been undertaken. Cross-referenced to window glass from similar stratigraphical layers, it has been shown that the two glasses are of different origin. The window glass found inside a former Dominican church is an imported material, whilst the other glass was found to be of a local primary production. Evidence of local production can be seen by the presence of Scandinavian trace elements, which the window glass lacks. Given that the local glass does not match the window glass, it can be concluded that this locally manufactured glass did not derive from window manufacture. Hence, it must be of another purpose, probably vessel glass.

The town layer where the local glass was found is 13th–14th century in date. Traditionally in glass studies it has been thought that primary production came to Scandinavia in the mid-16th century with the invitation of two glassmakers to the royal court in Sweden. However, this new evidence points to the possibility that glass was produced long before this, and that the first primary production in Scandinavia was at least 300 years earlier than commonly believed.

## **POSTERS**

### **E03.01-P-3: Glasses for the dead. Trade, intercultural contacts and mortuary customs in late medieval Wallachia**

by **Draagoş Măndescu** (Argeş County Museum, Romania), **Marius Păduraru** (Argeş County Museum, Romania), **Ion Dumitrescu** (Argeş County Museum, Romania)

A series of archaeological discoveries made in the late medieval cemeteries from Wallachia (today southern Romania) led to the identification of a specific funerary object, namely a glass vial, put in the grave on the right side the deceased. This is obviously an unusual burial practice in the context of Christianity doctrine which prohibits the deposit of offerings in the coffin with the dead. The graves (generally belonging to rich women with high social status) in which it this type of vial occur date to between the 15th and 17th centuries. The glass is good quality, thin and delicate – undoubtedly a luxury and expensive item. It is certainly an imported product, since the first glass manufactory in Wallachia was not founded until the 17th century. The origin of these small bottles is likely to be Transylvania or Central Europe. The highest density of such bottles in medieval graves has been recorded in the Muscel region, north of the country. The prevalent spread in this area can probably be explained by the great trade fair annually held in Campulung, the capital city of the region, through which the glass vials were probably traded.

### **E03.02-P-3: Glass vessels of the 16th – 17th centuries from the cemetery of the Ascension Convent in the Moscow Kremlin: Traditional forms and non-traditional use**

by **Ekaterina Stolyarova** (Institute of Archaeology, Russian Academy of Science, Russian Federation)

The poster deals with glass vessels of the 16<sup>th</sup> – 17<sup>th</sup> century from the cemetery of the Russian grand duchesses and tsarinas at the Ascension Convent in the Moscow Kremlin. The vessels were recovered from burials in the course of transposition of sarcophagi to the subterranean chamber of the Archangel Cathedral in August 1929, and added to the collection of the Kremlin museums. It appears that they are of European manufacture and designed for drinking wine, beer and other beverages. Some of them were also used as tabernacles in the Western European tradition. However, their function changed in Russia, where they were used as lacrymatories in the ritual of extreme unction before being placed in the sarcophagi with the deceased.

## Session E04

### Mesolithic survivals: Origins and perpetuation of wild resource use

Thursday, 5 September 2013, 14:00–18:30

Room: EU 102 (Building 1, ground floor)

**Organisers:** **Karen Hardy** (Universitat Autònoma de Barcelona, Spain), **Raquel Pique** (Universitat Autònoma de Barcelona, Spain) and **Lucy Kubiak Martens** (BIAx Consult, The Netherlands)

The archaeology of the past is divided between hunter-gatherer and agricultural subsistence methods; however wild resources continued to be present in the diet, as it is well documented throughout prehistory and history. We can find examples in Europe today, including the continued knowledge and popularity of wild mushrooms, marine resource retrieval and collection in many coastal regions, the perpetual fascination with honey documented already in prehistoric contexts (cave paintings) as well as the continued use of plants to treat ailments.

Paleodietary reconstruction has largely focused on the well-visible remains such as bones and shells or macroscopic remains of a small number of plant species, usually the domesticated ones. But do these really offer a true representation of post-agricultural diet? A glance at diets from non-westernized countries suggests that diet is frequently nutritionally enriched by the inclusion of seaweed and insects, and a wide range of resources not normally visible in archaeological contexts such as leaves as well as mushrooms, and fungi, which can be ingested either as food or for other purposes, such as medicine or to induce altered mental states. The use of raw materials also survives to today as horn, shells, wood, bark and leather continue to be used in numerous contexts.

In this session we wish to encourage the documentation and analysis of wild resources not only in the hunter-gatherer but also Neolithic and later contexts. Examples include identification of normally degraded items in waterlogged contexts, analytical methods to identify the 'invisible' items and nutritional perspectives on the less common resources.

#### **E04.01: Taphonomy of wood charcoal from Cabeço da Amoreira (Muge shellmiddens): preliminary results**

by **Patrícia Monteiro** (*Universidade do Algarve, Portugal*)

Cabeço da Amoreira is one of the Muge Mesolithic shellmiddens, located in the Tagus Valley, 60 km from Lisbon, dated from 8200 to 7500 cal BP. The transition to the Holocene brought important changes to the last hunter-gatherer Tagus landscapes. The growing complexity of human societies is intrinsically connected with these changes, and the available resources played an important role in the economy of these populations. Woodland resources provided among others, wood for fuel as well as other uses within the settlements.

Taphonomical studies identify depositional and post-depositional alterations of archaeobotanical assemblage. Conservation conditions of wood charcoal depend on several factors, related with the species, its combustion, use and preservation. This information is crucial for interpreting the archaeobotanical data in the archaeological context. Here it will be presented the first taphonomical charcoal analyses recovered in Cabeço da Amoreira.

#### **E04.02: Use of wood and plant material at the Zamostje 2 site**

by **Olga Lozovskaya** (*Institute for the History of Material Culture RAS, Russian Federation*)

Wetland settlements often provide favorable conditions for preservation of fragile organic materials. Zamostje 2 site (Volga-Oka region, Central Russia) is a Late Mesolithic – Middle Neolithic lakeshore settlement of ancient hunters-fishermen dated to the beginning of the 7th millennium to the second half of the 5th millennium cal BC. The vegetation of this period is characterized by birch and pine forests, in the later phase by broadleaved woodland. Preserved in waterlogged environment remains of woods, bark, seeds, nuts, fungi and plants allowed us to reconstruct specific ways of use of wood raw materials for building constructions and tool making, application areas of bark and some non-woody plants. Some seeds and nuts remains found in the "archaeological context" (crust on pottery pieces, coprolites) indicate their use as food.

*This investigation was supported by RFBR project № 11-06-00090a.*



#### **E04.03: Cultural Categorisation of Plants by Prehistoric Fisher-Gatherer-Hunter Communities of the Northeastern Europe**

by **Liliana Janik** (University of Cambridge, UK)

The remains of plants on archaeological sites are treated as a manifestation of cultural categorisation made by prehistoric fisher-gatherer-hunter communities of Northeastern Europe. The use of plants by prehistoric communities was very versatile and can be viewed in terms of cultural behaviours that cross-cut all spheres of life, from food to building materials. Keeping this in mind, this presentation concentrates in particular on four issues: plant foods as a cultural category, plants as medical substances, the use of plant materials for implements of everyday life, and the use of plants in creating symbolic representations as anthropomorphic and zoomorphic depictions. The data from Mesolithic, Neolithic and Early Bronze Age archaeological sites located in Lithuania, Latvia and Northwestern Russia will be presented.

#### **E04.04: Wild resource use at the Late Neolithic site of La Draga, Banyoles, Spain**

by **Raquel Piqué** (Universitat Autònoma de Barcelona, Spain), **Ferran Antolin** (Institut für prähistorische und naturwissenschaftliche Archäologie (IPNA), Switzerland), **Marian Berihuete** (University of Hohenheim, Germany), **Angel Blanco** (Universitat Autònoma de Barcelona, Spain), **Ramon Buxó** (Museu d'Arqueologia de Catalunya, Spain), **Lluís Garcia** (Associació Catalana de Bioarqueologia, Spain), **Josep Girbal** (Universitat Autònoma de Barcelona, Spain), **Antoni Palomo** (Universitat Autònoma de Barcelona, Spain), **Maria Saña** (Universitat Autònoma de Barcelona, Spain), **Ester Verdun** (Universitat Autònoma de Barcelona, Spain)

La Draga is a lake dwelling occupied between 5300–5000 cal BC by a community of farmers. The site is located on the shore of Lake Banyoles. Agriculture and livestock were the basis of their livelihood. However wildlife resources also had a very important role for this community. We highlight the diversity of the wild resources which include: mushrooms, fruits, seeds, fish, birds, mammals, reptiles, turtles and marine and terrestrial molluscs, and their catchment areas. We also examine the collection and hunting techniques involved in their procurement. The range of material found is used to highlight seasonality and diverse origin, which provides data on the economic strategies of this community.

#### **E04.05: Wild plant use in the Late Neolithic in the Dnepr-Dvina basin (North-western Russia)**

by **Marian Berihuete** (Hohenheim University, Germany), **Ekaterina Dolbunova** (The State Hermitage Museum, Russian Federation), **Andrey Mazurkevich** (The State Hermitage Museum, Russian Federation)

Serteya I and Serteya II are two underwater Late Neolithic sites situated in the Smolensk region (Northwest Russia). They were discovered in 1972, during explorations of the River Serteyka. Serteya II is a pile-dwelling type settlement, while Serteya I has been interpreted as a fishing site used for the exploitation of riverine resources, and probably for other household activities. Both sites were excavated using underwater archaeological methods and excavation of the peat-bog lying nearby was also conducted. Along with ceramics, bone, flint and amber artefacts, a large amount of charred and uncharred organic materials have been recovered. Tools and recipients of wood, as well as well-preserved seeds and fruits were recovered.

Previous work in the region has shown that the gathering of plants for food was of considerable importance and here we will focus on the plant resources used for food. In Serteya II and I, remains of two important economic wild plant resources, hazelnut (*Corylus avellana*) and water chestnut (*Trapa natans*) has been identified, along with other species that typically grow in water-rich habitats and that could have been also used by people for food, medicine or raw material.

#### **E04.06: Rapid changes everywhere? The Neolithic way of life and the survival of Mesolithic traditions in the dietary record of Europe and Southwest Asia**

by **Alisa Scheibner** (Freie Universität Berlin, Germany)

Food as a marker of the Mesolithic-Neolithic-transition is well researched in many regions of the Old World through isotopic studies and bioarchaeological analyses such as archaeozoology, archaeobotany and physical anthropology. For some regions (e.g. Sweden), dietary analyses show that there is evidence for a delayed adoption of Neolithic diet and subsistence patterns, defined as consisting primarily of domesticated animals and plants. Contrarily, rapid changes in diet took place in other regions (e.g. Great Britain) after the beginning of the Neolithic, discernible among others by a decline in marine resources. This raises the question if variations in dietary patterns are due to the survival of Mesolithic culinary or cultural traditions after the Neolithisation or rather due to local environmental or topographic conditions of some regions.

The aim of this presentation is to give an overview over the current state of research of dietary patterns concerning the Neolithisation process, displaying possible alterations in dietary habits over time. Looking for reasons of divergent dietary patterns, this will be done on a larger regional scale (Northern Europe to Southwest Asia), using published isotopic data (C and N) combined with information from other affine disciplines such as archaeozoology, physical anthropology and residue analyses.

**E04.07: The changing nature of coastal resource use.**

by ***Karen Hardy*** (*Universitat Autònoma de Barcelona, Spain*)

Evidence for coastal resource use, in the form of shell middens, can be found in many parts of the world. But the term 'shell midden' is used to define a wide range of different coastal sites, ranging from huge landscape-changing mounds, to small, barely visible, accumulations of shell or slow-accumulating deposits that can eventually fill up rockshelters. A closer look at the different types of shell middens suggest that the way these have accumulated can help to distinguish different uses of the coastline and coastal resources. Using a combination of radiocarbon-dated evidence for different types of shell accumulations, and ethnoarchaeological observation, we explore how the nature of shell middens, and their patterns of accumulation, can contribute to an understanding of different ways coastal resources were used at different times in the past.

## Session E05

### Salt of the Earth: an invisible past in European Archaeology

Friday, 6 September 2013, 14:00–18:30

Room: UU 405 (Building 2, 4th floor)

**Organisers:** **Robin Brigand** (Lab. Chrono-Environment – UMR 6249, MSHE Ledoux – USR 3124, France and Alexandru Ioan Cuza University, Romania), **Olivier Weller** (CNRS, Lab. Trajectories, UMR 8215, MAE, France), **Marius Alexianu** (Alexandru Ioan Cuza University, Romania) and **Roxana Curca** (Alexandru Ioan Cuza University, Romania)

With today's standardization of food habits, salt loses its importance, typical of preindustrial societies. In certain regions, it still plays an indisputable social role, with practices ranging from punctual harvesting to a true industry. Studying salt in ancient societies requires a multidimensional approach. What tools and methods could be used to take into account all its social, politic, economic and symbolic dimensions? How would an integrated approach between past and present allow us to consider salt in all its social complexity?

This session intends to review our current understanding of the salt production process, by assessing the archaeological, historical and ethnographical evidence as well as current interpretation and theories in this research area. Two complementary questions should be explored. The first one is an approach of studying today's uses and context of salt production and circulation. It is fundamental because it deals with practices that will soon have disappeared and can offer some predictive models for archaeologists. The second one is an archaeological approach of studying the uses and social strategies developed around this resource and his remains (ceramic technology, experimental archaeology, paleoenvironmental, chemical or geoarchaeological studies). It allows us to track the technical and economical behaviors, but also to highlight competition and societal choices caused by the availability and circulation of salt.

The quality and quantity of new data in the last decade call for a necessary standpoint about salt uses, exploitation, as well as its socioeconomic impacts. The comings and goings between past and present, between archaeology and ethnography, allow us to sketch a history of relations between man and this specific resource from a long term perspective.

#### **E05.01: Prehistoric salt production in Japan: Focusing on the period of transition from hunting-gathering to agricultural society**

by ***Takamune Kawashima*** (University of Tsukuba, Japan)

In the Kantō region of the Late Jōmon period, salt production is clearly observed because of the existence of the special pottery. Salt production is widely performed in the Pacific Coast of eastern Japan. In northern Japan, the tradition of salt production continues to the Yayoi period, in which agriculture is introduced to Japan. While the agriculture spreads from west, salt is produced only in northern Japan at the first stage of the Yayoi period. It is controversial from the point of view that a demand of salt increases with the introduction of agriculture. There are no direct relation of the salt production technique and the trace of exchanging salt between both regions. In the Late Yayoi period, salt production occurs in the Inland Sea, which was operated in larger scale than in Jōmon. Salt production in the Inland Sea is probably connected to the development of social organization. In this paper, I will try to examine the origin of the salt production in the Inland Sea and the difference between both regions, as well as the meaning of salt in the Jōmon period.

#### **E05.02: First Salt Making in Europe: a Global Overview from Neolithic times**

by ***Olivier Weller*** (CNRS, Lab. Trajectories, UMR 8215, MAE, France)

This paper will discuss different approaches ranging from technology, ethnoarchaeology, paleoenvironmental studies to chemical analysis. From the current research on the origins of salt production in Europe, it will examine the type and nature of salt resources (sea water, spring or rock), the diversity of archaeological evidence as well as forms of salt working during the Neolithic. It will also scrutinize the types of production and the first forms of salt production — with or without crudely-fired clay artefacts (*briquetage*). Finally, it will contextualize the socio-economic dimension and highlight both the diversity of salt as well its characteristics which go well beyond food consumption.

### **E05.03: The role of salt in Hessia (Germany): The basis of an economic turntable in the 5th and 4th millennium?**

by **Detlef Gronenborn** (Roemisch-Germanisches Zentralmuseum, Germany), **Sandra Fetsch** (Roemisch-Germanisches Zentralmuseum, Germany), **Olivier Weller** (CNRS, Lab. Trajectories, UMR 8215, MAE, France)

Salt may have been a commodity of great economic importance during the Michelsberg culture period in the Rhine-Main region and beyond; its economic value might have been counterbalanced, for example, by jadeite axes from alpine sources. This possible relation becomes apparent, when salt sources and jadeite axe single finds and hoards are mapped.

Given the fact that the largest Michelsberg sites, enclosures and hill-forts, cluster in the Rhine-Main area, a role as a central economic turntable of European dimension might have to be considered for the region. Michelsberg sites are found alongside east-west- and north-south-bound trade routes which had been in operation until Medieval and Early Modern times.

### **E05.04: Salt in the prehistory of Istria, Croatia**

by **Klara Buršić-Matijašić** (Juraj Dobrila University of Pula, Croatia)

Salt is one of the essential elements in the development and existence of human communities in prehistory. Its presence can be detected through various activities (the collection of salt from sea-pans, trade, transhumance) and material aspects (typology of vessels, the number of domestic animals etc.), as well as by the presence of places-names with the root corresponding to sal, sale, salt, salz, sol. Apart from material remains that indicate the use of salt in everyday life, the paper will analyze the position of archaeological sites (hill-fort settlements, castellieri, which are an archaeological, cultural and landscape phenomenon) compared to the natural sources of salt. How many can be connected with positions or places with toponyms that contain the root "sal"?

### **E05.05: New data and observations related with exploitation and transport of salt in prehistory**

by **Gheorghe Lazarovic** (Lucian Blaga University, Romania)

In some recent studies we reactivated our older interest related with salt in prehistory, due to new projects led by Olivier Weller and Marius Alexianu. Our involvement in very interesting ethnoarchaeological projects in Romanian territory is related with John Nandris. We do not continue salt theme that we have been involved in the '80, but always we gathered information on this topic.

During Neolithic and Copper Age (but also at the beginning of Bronze Age) Transylvanian salt roads to Pannonian Plain and especially to the southern central Balkans Mountains by Banat, now representing the border between Serbia and Bulgaria, play an important role in generalization processes of migration and diffusion. Rising of the Balkan and Carpathian Mountains brought to the surface salt mineral resources, and in their vicinity to the mountain, copper, gold, etc.

In this case we will discuss the problem of two categories of objects: artifacts for crushing minerals (salt, copper, gold), and those used for transportation (knapsacks). The artifacts we will present come from Turdaş (Transylvania) and Ocelele Mari – Govora (Oltenia).

### **E05.06: Spatial Models for Salt Archaeology. A Neolithic Case Study from Moldova (Romania)**

by **Robin Brigand** (Lab. Chrono-environment (UMR 6249), France), **Olivier Weller** (CNRS, Lab. Trajectories, UMR 8215, MAE, France), **Andrei Asandulesei** (Univ. Al. I. Cuza, Romania)

The external Carpathian Area (Romania), characterized by a high density of salt springs and salt cliffs, holds the record for the most ancient traces of salt exploitation in Europe, beginning with the Neolithic. Using ethnoarchaeological models and a GIS integrated approach focused on the evolution of settlements patterns from Early Neolithic to Late Chalcolithic (6000–3500 BC), we show that – and explain how – a specific resource like salt was a driving factor for the first farming groups. Focused on the social organization of salt exploitation, this work investigates the spatial relationship between salt and settlement strategy over 2000 years.

### **E05.07: Bronze Age Salt Production and Exchange in Carpathian Basin**

by **Cavruc Valeriu** (*State University of Moldova, Republic of Moldova*)

The MBA and LBA (ca 1600-850 cal BC) evidence for salt production in the northern half of Transylvania and south of trans-Carpathian Ukraine reveals sophisticated system of industrial in scale extraction, storing and trade of rock salt.

Salt was mainly produced for exterior consumers. The salt production sites in the region were naturally connected to the navigable rivers: Tisa/Tisza, Someş/Samos and Mureş/Maros, which link the salt rich regions to the saltless territories of the Middle and Lower Tisa. The prestige goods (Reinecke Br A - Ha B), the fortified settlements (Reinecke Br C, D) in the area are situated in the key positions along the abovementioned rivers. The richest Reinecke Br D-Ha A hoards often were discovered close to the rich rock salt deposits and/or in the key positions along the same rivers.

The dynamics of salt production in the north-east of the Carpathian Basin to a great extent corresponds with that of use and trade of tin and amber.

The above picture highly suggests that Transylvania and trans-Carpathian Ukraine supplied with salt the high developed BA groups in Danube-Tisa Interfluvium and Balkan Peninsula.

### **E05.08: Salts of Northern Gaul**

by **Gilles Prilaux** (*INRAP, France*)

In France, the oldest testimonies related to the production of salt are found in 5th Millennium BC contexts. The process then was to pour brine (salt saturated water) directly on ovens so to extract salt crystallized but also salt ash. This technique was described by Pliny as a practice of the Celts. It evolved until the establishment of real workshops for the production of salt on the North and Atlantic coastal facade in the Gallic period. Workshops were even discovered 100 km from the coast; this is the case of those discovered during the excavation at Saint-Laurent-Blangy, nearby Arras. In this case, the workshop was integrated into a large Gallic aristocratic estate showing the political and social importance of this element, true societal barometer. Propagation of the archaeological excavations and specialization of some researchers on this subject allowed to understand more precisely the operating chain. The obtaining salt, here, is done by the fire, and not, as it's the case of the salt tides, by the Sun and the wind. Salt was made in loaf in containers to perfectly calibrate the amount of salt.

### **E05.09: Salt in Roman Britain**

by **Isabella Tsigarida** (*University of Zurich, Switzerland*)

Following the Roman expansion into Britain where large parts of Roman military forces were based, this paper discusses how the growing demand for salt – one of the most vital resource in ancient times – was ensured long term and whether any increase in salt production could be ascertained.

It will also look at salt winning methods and related infrastructural measures during the Roman settlement in Britain, as supported by archaeological evidence.

### **E05.10: Research on ancient salt exploitation in Polish lowlands**

by **Maria Ruiz del Árbol Moro** (*CSIC, Spain*), **Józef Bednarczyk** (*UAM, Poland*), **Joanna Jaworska** (*UAM, Poland*), **Arkadiusz Marciniak** (*UAM, Poland*)

The aim of this paper is to present the first steps and results of research on ancient salt exploitation in Polish lowlands (more concretely in the regions of Wielkopolska and Kujawy). This research is integrated in a general analysis of the Barbaricum during the 1st and 2nd centuries AD. Salt mining is considered to be essential to understand the dynamics of social change in the Barbaricum from Augustus times. The study of salt is integrated in a comprehensive analysis of the exploitation of resources within the social and territorial organization.

#### **E05.11: Natural brine or rock salt exploitation? Ethnoarchaeological researches in the extra-Carpathian area of Romania**

by **Marius Alexianu** (Univ. Al. I. Cuza, Romania), **Olivier Weller** (CNRS, Lab. Trajectories, UMR 8215, MAE, France), **Robin Brigand** (Lab. Chrono-environment (UMR 6249), France), **Ion Sandu** (Univ. Al. I. Cuza, Romania), **Gheorghe Romanescu** (Univ. Al. I. Cuza, Romania), **Roxana Curca** (Univ. Al. I. Cuza, Romania), **Vasile Cotiuga** (Univ. Al. I. Cuza, Romania), **Radu Balaur** (Univ. Al. I. Cuza, Romania), **Stefan Caliniuc** (Univ. Al. I. Cuza, Romania), **Felix Tencariu** (Univ. Al. I. Cuza, Romania)

A number of locations from the extra-Carpathian saliferous areas of Romania can be defined through the proximity between rock-salt outcrops and salt springs. Considering the diachronic concentration of archaeological sites around these locations, the question emerges whether the salt requirements of the human communities were covered through the exploitation of natural brine or of rock salt. Because the respective areas still harbour resilient behaviours of salt supply, they provide the ideal framework for conducting ethnoarchaeological research.

Two Romanian projects with French participation – Ethnosol (2007–2010) and EthnosolRo (2011–2014) – provide valuable ethnographic models for understanding situations from the archaeological period. Both forms of exploitation are used simultaneously. They have distinct finalities: natural brine is used for satisfying the salt requirements of human communities; rock salt is intended for domestic animal use. If the purity of the rock salt is high, it is also used for human alimentation.

The practice of salt recrystallisation from natural brine in areas where rudimentary mining of rock salt deposits is still encountered. But the ethnographic inquiries revealed that recrystallised salt has a better taste, and the chemical analyses indicated that these qualities can be explained by the presence in natural brine of specific elements.

## Session E06

### What's for Dinner?: Archaeological evidence of food production and consumption

**Saturday, 7 September 2013, 08:30–16:00**

**Room:** UP 108 (Building 2, ground floor)

**Organisers:** **Linda Scott** Cummings (PaleoResearch Institute, USA) and **Mária Hajnalová** (Constantine the Philosopher University in Nitra, Slovakia)

Food, defined as anything consumed, is part of our daily lives and represents a substantial part of human culture. The efficiency of food acquisition and production in pre-industrial societies determines the time available for all other social and cultural processes. Yet finding evidence of and interpreting the prehistoric record of food, whether dealing with acquisition, processing, or consumption, has its challenges. This section focuses only on one aspect of the question, which is plant food.

Plant remains may be represented by microscopic remains (pollen, starch, phytoliths) or macroscopic remains (seeds, plant parts, charcoal). We might also recover the chemical signatures that represent foods. The level of preservation is not universally predictable, so the microscopic data set is often ignored under the assumption that if there is evidence it will be obvious in the macrofloral record. Micro and macro data sets, as well as chemical signatures, are important in reconstructing past diet and perhaps even cuisine. They can also provide evidence of different strategies of food/agricultural production, storage, trade or exchange.

Main themes:

- interaction between people and plants
- possibilities and limitations of knowledge: methods suitable for the recovery of plant material from archaeological sites (records?)
- social and cultural factors of food production and consumption
- strategies of plant acquisition and processing
- the role of soils, climate, water supply and other environmental factors in food production
- food as an element of culture

#### **E06.01: The Larger Scale: The application of airborne and spaceborne reconnaissance for understanding historical food production**

by **Kasper Hanus** (Jagiellonian University, Poland)

Acknowledging the focus of this session on examining information about ancient food production from evidence in the micro-scale, e.g. seeds or pollen analysis, I believe that research on food production also benefits from use of larger landscape scale. Comparison of aerial and satellite images can be important in providing evidence about historical food production. As examples of the application of airborne and spaceborne reconnaissance I shall focus on two examples from Asia. One is the site of Miran (米兰) in modern Xinjiang-Uyghur Autonomous Region, China. Examination of archival (Cold War) and modern satellite images revealed an extensive network of irrigation channels that correspond with written sources about agriculture in oasis-cities of the Taklamakan Desert. Another important site is the Greater Angkor in Cambodia. A wide range of remote sensing techniques used on this site indicated an extensive water management system and patterns of rice fields. This presentation is designed to show that integration of aerial/satellite data could support our understanding of the archaeology of food production and provoke discussion about complementarity of micro- and macro-scale research.

#### **E06.02: Environment and diet at Neolithic Vinča (5600–4200 BC)**

by **Kristina Penezić** (Institute for Balkan Studies, SASA (Serbian Academy of Sciences and Arts), Serbia), **Dragana Filipović** (Freelance archaeologist, Serbia)

The eponym site of the Neolithic Vinča culture is located on the Danube near Belgrade in Serbia. It was first excavated in the early 20th century, and then again in 1970s, revealing a ca. nine meter-high mound representing superimposed archaeological layers resulting from the continuous occupation over a very long period.

Renewed excavations at the site over the past twelve years have included geomorphological, archaeobotanical, zooarchaeological and other studies. This paper focuses, on one hand, on the palaeoenvironmental evidence of the

early to mid-Holocene environmental changes of the Danube fluvial landscape, more specifically, the soils and water supply in the site catchment area, in order to reconstruct the growing conditions of crop and wild plants attested in the on-site archaeobotanical assemblage. On the other hand, the paper discusses the identified plant taxa as indicators of the types of food consumed by Vinča residents. Finally, the paper brings together the two lines of evidence and uses the combined data to infer the method and season of food provision/production, and the location of plant food resources.

#### **E06.03: Prehistoric cereal cultivation in relation to environmental conditions**

by **Daqmar Dreslerová** (Institute of Archaeology, ASCR, Prague, v.v.i., Czech Republic), **Petr Kočár** (Institute of Archaeology, ASCR, Prague, v.v.i., Czech Republic), **Tomáš Chuman** (Charles University in Prague, Faculty of Science, Czech Republic), **Štefan Poništiak** (Charles University in Prague, Faculty of Science, Czech Republic)

The research of the Late Bronze and Early Iron Ages cereal macroremains from the territory of the present day Czech Republic revealed that the most important environmental variable (altitude, weather conditions, soils and soil productivity) influencing the proportion of cultivated wheat and barley within the crop assemblages was most likely altitude associated with the length of growing season. Wheat predominates in lowlands while barley production is favoured in highly elevated areas. Careful adaptations of farming strategies to local environmental conditions may help to achieve optimal yields and to reduce the danger of crop failure. Our presentation deals with the question whether similar principles hold true also in other prehistoric periods.

#### **E06.04: Wine, society and economy during the Iron Age in the valley of the Ebro River (Spain)**

by **Francisco Burillo-Mozota** (Zaragoza University, Spain), **María Pilar Burillo-Cuadrado** (Zaragoza University, Spain)

The Phoenician amphorae containing wine from the seventh century BCE are concentrated at the end of the Ebro River. Hint of a trade that will transform the egalitarian society from the First Iron Age. There comes out an aristocratic society to be buried with *simpula* and metal utensils to mix and pour the wine in festive ceremonies and ritual libations. Their homes are built outside the towns. These are “casas-torre” (tower houses) with ceramics inside, like the *oinokhoai*. This aristocratic process collapses with the out coming of the “Old Iberian crisis”. In the fourth century, consumption of wine with Greek *kilikies*, approaches the middle course of the Ebro River. In the third century appears the first evidence of local wine production in the Iberian village of San Antonio de Calaceite. Local production does not prevent the consumption of italic wine arriving into amphorae.

In the Celt Iberian city of Segeda a winery with a capacity of 2000 litres, together with some leftovers of *vitis vinifera*, have been discovered. In the site of “Segeda Nova”, a project about Experimental Archaeology is being carried out: it has been built a winery and a wine cellar; and since 2009 it is producing wine.

#### **E06.05: Direct evidence of drinks from archaeological context by pollen analysis: mead, grape vine, beer, brandy**

by **Manfred Rösch** (Regierungspräsidium Stuttgart, Germany)

The study of drinks in prehistory is seldom undertaken in archaeobotany because drinks often consist primarily of liquid and contain no, or very few, plant microfossils. However, many drinks were produced using plants as basic products and the final drink may still contain microscopic traces of these plants. Deduction of the content of drinks preserved in the archaeological record relies on experiments that produce drinks in an old-fashioned way, then on comparison of the plant microfossils between the experimental product and the archaeological remains. Fill from several Iron Age bronze vessels from central Europe were investigated. Their rich content of pollen from mostly bee-pollinated plants can be interpreted to represent the presence of mead that was prepared from honey collected in the wild. Contents of amphorae from Early Medieval Egypt were identified as wine made from grapes through recovery of *Vitis* (grape or vine) pollen. Sometimes the wine was improved by adding honey, as evidenced by recovery of a few pollen types from plants that are typically bee-pollinated. This corresponds with experimental work. Contents of a wooden bottle from an Early Medieval grave at Trossingen consisted of different components including beer made from barley malt and hemp, mead, and a grape-vine mash.



#### **E06.06: A Record of Culinary Practices from the First Millennium BCE, Peru**

by [Linda Scott-Cummings](#) (PaleoResearch Institute, USA), [Kathryn Puseman](#) (PaleoResearch Institute, USA), [Chad Yost](#) (PaleoResearch Institute, USA), [Peter Kovacik](#) (PaleoResearch Institute, USA), [Melissa Logan](#) (PaleoResearch Institute, USA), [Beverly Clement](#) (Louisiana State University, USA), [David Chicoine](#) (Louisiana State University, USA)

Caylán, a large urban center with monumental architecture located in the coastal desert of northern Peru, yielded coprolites from the Early Horizon (800–1 BCE) occupation. These coprolites are unique in being examined for dietary evidence using pollen, phytolith, starch, macrofloral, faunal, and protein residue analyses, and also their infra-red signature. This suite of analyses addresses questions concerning diet and diet breadth, the importance of cultivars, integration of native/wild resources into the diet, and the presence of marine resources. Caylán occupants had access to both arable land and the sea, resulting in a dual subsistence economy and exploitation of both terrestrial and marine resources. Cultivars included at least maize, beans, peppers, tomato, tomatillo, calathea/canna roots, squash, guava, and cotton. Diet richness is illustrated by the variety of remains recovered from individual coprolites, which may vary from primarily fish to a wide variety of cultivated and native grains (maize and other grasses), tubers (sedge and calathea/canna), and fruits/vegetables. Capsicum was noted regularly, indicating the importance of hot peppers in the diet. Recovery of parasite eggs and dried worms attests to parasitic infestations, possibly from consuming raw fish. This study integrates multiple data sets to provide an interpretation of diet and health.

#### **E06.07: The contribution of dental calculus to paleodietary reconstruction.**

by [Karen Hardy](#) (Universitat Autònoma de Barcelona, Spain), [Anita Radini](#) (University of York, UK), [Yvette Hancock](#) (University of York, UK), [Stephen Buckley](#) (University of York, UK)

Dental calculus is a mineralized biofilm formed on teeth. It is very common on archaeological human skeletons and some animals. If dental plaque is not cleaned off it can calcify; once this occurs, the dental calculus can survive for extended periods of time. The study of human dental calculus has recently become a focus on bioarchaeological interest for its potential to provide new insights into aspects of lifestyle, diet and health. The fine matrix of the calculus traps microscopic food debris as well as chemical compounds from ingested or breathed-in material, during its formation. A combined approach, incorporating morphological identification of entrapped materials, with analytical identification of chemical compounds, provides detailed new insights into aspects of lifestyle, diet and oral health.

#### **E06.08: Using Bone Chemistry to Identify the Introduction and Importance of Maize in the Diet: Archaeological Data for Florida Prior to European Contact**

by [Robert Tykot](#) (University of South Florida, USA)

While carbon isotope analysis of human remains to assess the importance of maize in the diet began in the 1970s, the principles of this method and limits on data interpretation have only become clear in the last two decades. In particular, the realization that bone collagen (mostly organic amino acids) mainly represents dietary protein means that even in agricultural societies terrestrial and aquatic animal foods are likely to be major contributors to its carbon and nitrogen isotope values, while the reliability of isotope data for bone apatite (mineralized carbonates), which represent the different parts of the diet equally, continues to be argued. This presentation, focusing on a large data set for many archaeological sites in Florida, illustrates the importance of combining the analytical data for both tissues, using mathematical lines and multivariate statistics, to distinguish C4 plants vs. marine resources. Isotopic as well as elemental data will be used to address claims about early maize at Fort Center, and others about maize not being cultivated in peninsular Florida. Bone apatite analysis is essential for such studies, yet the isotopic data for multiple body tissues must be integrated with faunal and floral remains, phytoliths, and ethnographic records for the best interpretations.

#### **E06.09: Socio-economic changes and their implication in the consumption and trade of meat during the La Tène Period in Northern France: the cases of Villeneuve-Saint-Germain and Condé-sur-Suippe (Aisne) oppida**

by [Pierre-Emmanuel Paris](#) (University of Paris 1, Panthéon-Sorbonne, France)

During the two last centuries before our era, northern Gaul is confronted with a severe socio-political crisis manifested by a phase of considerable urban development. The re-organization of the territory deeply alters the landscape of Belgic Gaul as the signs of actual Gaulish city-states emerge. This rapid and complete transformation of society provokes major economic changes, particularly in the sector of meat resources.

New butchering methods appear in certain pre-roman sites, diets seem to become more and more standardized and the trade of meat and agricultural primary foods occupies a prominent position in the economy both within and between territories.

Through the archaeozoological study of two *oppida* in the Aisne valley (France) dating from La Tène D1/D2 (150–30 BC), we will try to demonstrate the differences in meat management and preparation, but also in diets, between two great urban entities: the *oppidum* of Villeneuve-Saint-Germain and the *oppidum* of Condé-sur-Suippe, which are partly contemporary and within 60 km of one another. It will then be necessary to consider the reasons, cultural and/or socio-economical, that caused these dissimilarities between two neighboring people.

#### **E06.10: Food procurement and dietary habits in the ancient capital of the Gallia Belgica Roman province of Reims/Durocortorum: archaeobotanical and historical investigations**

by *Véronique Zech-Matterne* (CNRS/MNHN, UMR 7209 AASPE, France), *Clémence Pagnoux* (PH D student, university of Paris I, France), *Pierre Ouzoulias* (CNRS, UMR 7041 ArScAn, France), *Philippe Rollet* (Inrap Grand Est Nord, France)

Archaeological investigations carried out in waterlogged conditions, on craft and residential quarters dated to the 1st–IIIrd century A.D., delivered hundreds of seed and fruit remains. The 350 identified taxa include luxurious fruits and spices, imported from the Near East or the Mediterranean. Exogenous weeds such as *Myragrum perfoliatum* indicate the import of cereals, especially free-threshing wheat, a long-distance trade well documented by the archaeobotanical study of 170 sites located in northern France (Zech-Matterne, Wiethold, Pradat, forthcoming). The consumption of naked wheat (and bread) is well attested in Reims, although only barley and spelt were regularly cultivated in the surrounding countryside, due to the local edaphic conditions, known from ancient buried soils (Boulen et al. 2012).

The city of Reims has always made allegiance to Rome and after the Gallic Wars it becomes a provincia capital, implying the presence of a Roman administration. Its architecture is remarkable. However, epigraphic sources refer mainly to the “peregrians”, and the number of the Roman citizens living in the city is hard to evaluate. This raises the question of the Romanization criteria. Although local elites seem inconspicuous, food procurement and food consumption habits testify to a population having a Roman lifestyle promoting new dietary modes.

#### **E06.11: The last supper: multiproxy analyses of a Gallo-Roman votive meal in Belgium**

by *Alexandre Chevalier* (Royal Belgian Institute of Natural Sciences, Belgium), *Mona Court-Picon* (Royal Belgian Institute of Natural Sciences, Belgium), *Quentin Goffette* (Royal Belgian Institute of Natural Sciences, Belgium), *Claire Goffioul* (DGO4 / Direction extérieure de Liège, Belgium)

The site of Wanze in the Belgian Liege region uncovered a Gallo-Roman farm, as well as an inhumation carefully delimited by a wooden chamber, now vanished, dated from the second half of the first century AD. In order to identify the origin and social status of the dead as well as to understand better the votive meals in the Belgica Roman Province one hundred years after its conquest by Julius Caesar, the content of height different ceramics – plates, jars and bottles – deposited together with the deceased, have been analyzed. In particular, macrofossil analyses (seed, wood charcoal, animal bones) have been applied to the sediments deposited in the ceramics, and microfossils (pollen, starches and phytoliths) have been extracted from the ceramic walls. Our results are compared with the current knowledge of Gallo-Roman votive food deposits.

#### **E06.12: Food and drink in European Prehistory (updated with a decade's research)**

by *Jacqui Wood* (Saveock Water Archaeology, UK)

Following my paper at EAA Ravenna in 1997 I was asked to submit a full paper for the EAJ for the millennium issue in 2000 titled ‘Food and Drink in European Prehistory’. The paper attempted to use a combination of archaeological data, experimental evidence, historical information and ethnographic sources to provide insights into the various methods which prehistoric communities had mastered in pursuit of the edible.

Over the last decade I have continued to research the diet and cooking techniques of our European forbears and found that farming practices and winter protein storage issues revealed some interesting results that have implications on the dietary problems of some Europeans today.

This paper will look at the development of ancient cooking techniques from the early Stone Age to the Celtic period in Europe. I have found that it is only when one actually attempts to recreate such techniques that real insights into food consumption during those periods are really discovered.

### **E06.13: Carbohydrate consumption, dental health and social identity in 17th and 18th century Oulu, Northern Finland**

by **Rosa Vilkkama** (University of Oulu, Finland), **Ritva Kylli** (University of Oulu, Finland), **Anna-Kaisa Salmi** (University of Oulu, Finland)

Food culture is linked to many aspects of identity, such as ethnicity, class, and gender. Archaeological analysis of food remains, such as animal bones, has so far produced information on the meat and dairy part of the diet, and their relation to class identity in Northern Finland. These studies have, however, neglected plant-based foods, and the more subtle variations in eating habits and norms of different groups such as genders and age groups.

In this presentation, we examine the changing food culture and emergent luxury consumption in 17th and 18th century Oulu in Northern Finland by the means of palaeopathological analysis of dental diseases. We especially concentrate on consumption of plant-based carbohydrate-rich foods such as bread, porridge and sugar, and their connection to social identity. Dental diseases can provide information about the contents of the diet as well as the texture of the consumed food. By examining the dental health of the people buried at the cemetery of the Oulu Cathedral in 17th and 18th centuries, we obtain detailed and individual information on carbohydrate consumption. Our results provide a new insight into the change of food culture and the increasing access to newly arrived luxury products such as sugar.

### **E06.14: Consumption patterns and living conditions in a 18th century rural nunnery: an interdisciplinary study on the latrine of Clairefontaine (south-eastern Belgium) with special attention to botanical remains**

by **Sidonie Preiss** (Royal Belgian Institute of Natural Sciences, Belgium), **Mona Court-Picon** (Royal Belgian Institute of Natural Sciences, Belgium), **Quentin Goffette** (Royal Belgian Institute of Natural Sciences, Belgium), **Davy Herremans** (Ghent University, Belgium), **Isabelle Bernard** (D'Millen asbl, Luxembourg)

The abbey of Clairefontaine, situated near Arlon in Belgium, was founded in the 13<sup>th</sup> century and destroyed during the French Revolution at the end of the 18<sup>th</sup> century. Although the abbey buildings were largely dismantled after the suppression of the community, archaeological research revealed the underground remains of the 18<sup>th</sup> century monastery.

A latrine was discovered on the south side of the monastic complex and excavated for a detailed interdisciplinary study. Plenty of macro-botanical and faunal remains, glass and pottery have indeed been found throughout the profile; analyses of plant micro-remains were also performed.

The major part of the archaeological remains dates between the second quarter and the end of the 18<sup>th</sup> century. Built over a narrow stream, the latrine underwent regular waste evacuation by the inflow of water. It is then supposed to give an insight into cabinet of the last generation of sisters present at Clairefontaine. A clear stratification is however observed with five different units delivering contrasted archaeobiological results.

We will focus here on the archaeobotanical data, which will be discussed in detail and compared with archaeozoological and historical studies, in order to illustrate the lifestyle and the consumption in a rural nunnery from the 18<sup>th</sup> century.

### **E06.15: What they ate, what they drank and of what? Look on daily life of the early modern burghers household in Český Krumlov town (Czech Republic)**

by **Michal Preusz** (University of South Bohemia, Czech Republic), **Jaromír Beneš** (University of South Bohemia, Czech Republic), **Petr Kočár** (Academy of Sciences, Czech Republic), **Lenka Kovačiková** (University of South Bohemia, Czech Republic)

The South Bohemian town of Český Krumlov, Czech Republic, protected by UNESCO, is a uniquely preserved Renaissance and Baroque site and former residence of the Rosenberg family. Past research has been based almost exclusively on extraordinarily rich collections of written sources from the town and nobility archives. In the last three decades seminal document collection was enriched by new archaeological resources, consisting mainly of artefacts and bioarchaeological material. Archaeological excavation of a stone well in the courtyard of the house in Český Krumlov – Latrán no. 55 (part of Český Krumlov historical core) was the subject of a broadly-based interdisciplinary investigation. An almost 12 metres-deep stone well contained a rich and complex deposit of archaeological material from a short time interval in the lower strata. This research resulted in a complex and detailed look into a specific burghers household, whose rich inventory reflected a new way of life connected with entry into modernity, which reflects a broad range of new types of dishes and diet, recorded mainly in ceramics, glass and in archaeobotanical and archaeozoological assemblages. In contrast to the late medieval period, the new early modern assortment of goods and witnesses to consumption address basic social and cultural transformation.

## POSTERS

### **E06.01-P-1: Food, technical and other plants from the late medieval monastic kitchen (14th–15th century) of Clairefontaine Abbey, Belgium**

by **Mana Court-Picon** (Royal Belgian Institute of Natural Sciences, Belgium), **Sidonie Preiss** (Royal Belgian Institute of Natural Sciences, Belgium), **Quentin Goffette** (Royal Belgian Institute of Natural Sciences, Belgium), **Davy Herremans** (Ghent University, Belgium)

Excavation campaigns at the Clairefontaine abbey (Belgium) revealed well preserved annex buildings which were part of the initial monastic settlement. They were in use as kitchen- and reception area from the mid-13<sup>th</sup> century, until they were rearranged as private quarters during the first half of the 16<sup>th</sup> century.

In this paper we will focus on the infill of a water basin which was in use between 1346 and 1457. Microscopic (pollen, non-pollen palynomorphs) and macroscopic remains (fruit/seeds, charcoal) were undertaken with the aim of investigating consumption and dietary patterns at the abbey during a century. The results show small amounts of cultivated plants and many remains of wild plants which characterize the surrounding area. Cultivated plants include cereals, oil and fibre plants, vegetables, kitchen herbs, as well as a dye plant. Plants with both medicinal and culinary uses have also been found. Grapevines, and maybe hops, were probably grown locally. Among the wild taxa, arable weeds and ruderal plants were prevalent.

Compared with the other data available (faunal remains, historical context), archaeobotanical results illuminate aspects of abbey's daily life, land use and environment in late medieval times. Special attention is also given to taphonomic processes of the different plant remains.

### **E06.02-P-1: Villeneuve-d'Ascq "La Haute Borne" (France), the archaeobotanical study of an 140 ha terroir, from Latenian to Roman period**

by **Marie Derreumaux** (CRAVO, France), **Carole Querel** (INRAP, France)

The archaeological investigations led in Villeneuve-d'Ascq "La Haute Borne" (Nord, France) by the I.N.R.A.P. took place on a 140 ha territory on the Melantois Plateau. This coherent territory offered the same environmental conditions to five rural settlements from 150 B.C. to 300 A.D. The archaeobotanical study associated with the settlements shape studies and the parcellar tracking allowed us to reconstruct what can be called a terroir and its evolution, in particular after the roman conquest.

### **E06.03-P-1: The chuff impression in the mud brick. A comparative methodology of archaeobotanical researches to reconstruct the agriculture of ancient populations and recognize the cereals used in ancient times.**

by **Anna Maria Desiderio** (Université Montpellier 3 Paul-Valéry, France)

In the last few years archaeology has more and more resorted to archaeo-botanic research. This subject – by studying the vegetable remains found during the excavation works – allows the reconstruction of the ancient vegetable environment and the use of both the cultivated plants and the environmental resources used by ancient populations. Unlike the animal remains, the vegetable ones such as seeds, fruits and wood were preserved in the archaeological sediments after being physically and chemically transformed. The most known techniques are: the oxidation, the carbonization, the mineralization and the imbibition. There's also a fifth type of fossilization that can be distinguished from the others since the cereal seeds are uniquely preserved in the shape of a "impression" These impressions can be observed also in the mixture of ceramics and torchis. The "impressions" – whenever presenting the suited identification features and are in good state of preservation – can help to determine the kind of cereal used.

### **E06.04-P-1: Evidence of Food Consumption at the Late Bronze Age Site Kalnik-Igrišće**

by **Snežana Karavanić** (Institute of archaeology, Croatia), **Sara Mareković** (Faculty of Science, Croatia), **Andreja Kudelić** (Institute of archaeology, Croatia)

At the Late Bronze Age site Kalnik-Igrišće in north Croatia remains of a burned house were excavated. On the floor of the house large quantities of pottery and carbonised archaeobotanical remains have been found. Kalnik-Igrišće is the first Bronze Age site in Croatia where an extensive archaeobotanical study was done. We isolated and identified 69103 charred plant remains, which could be grouped into three ecological categories: cultivated and useful herbs (cereals and legumes), crop weeds and useful trees and shrubs. The most numerous remains belong to cereals and legumes: millet (*Panicum miliaceum* L. – 32 %), barley (*Hordeum vulgare* L. 18.43 %) and horsebeans (*Vicia faba* L. – 13.09 %),

followed by wheat (*Triticum aestivum* ssp. *aestivum* L – 9.01 % and *Triticum turgidum* ssp. *dicoccon* (Schrank) Thell. – 8.29 %), lentil (*Lens culinaris* Medik.– 7.12 %) etc. The finds of apple (*Malus sylvestris* Mill), oak (*Quercus* sp.) and cornelian cherry (*Cornus mas* L.) suggest that the inhabitants of Kalnik-Igrišče were also collecting fruits for their nutrition from the neighbouring woods. The poster presents the results of archaeological and archaeobotanical studies about food consumption in Late Bronze Age settlement site.

#### **E06.05-P-1: Archaeological evidence of olive oil and wine production in Histria and Dalmatia in the 1st–5th century**

by **Jana Kopackova** (Charles University in Prague, Faculty of Arts, Czech Republic)

We find quite often archaeological evidence of processing grapes and olives in the Roman province of Dalmatia and part of the Italian Regio X Histria. Among the archaeologically detected proofs of this important agricultural production belong not only the pressing room with different equipment (fruit mill – trapetum, pressing device type prelum), but also a warehouse for finished products (cella olearia / vinaria).

Many authors inform us about these tools and architecture (Vitruvius), agriculture (Pliny the Elder, Cato the Elder, Varo, Columella), and gastronomy (Apicius). Considerable differences in wine/oil production are noted between these two regions. Unequal representation of production centers on the coast of Histria, with less evidence in Dalmatia, a pattern that is more visible on a map. At the same time pressing rooms in Dalmatia have more modest dimensions (maximum 5 presses in pressing room).

This poster provides a new comprehensive map of all known Roman sites linked to the production of wine/oil, ground plans and photographs of sites, and a step by step explanation of the procedure of processing grapes and olives to the finished product.

## F: Archaeological Science

### Session F01

#### The bioarchaeology of the neolithic Carpathian Basin

Friday, 6 September 2013, 14:00–18:30

Room: EU 109 (Building 1, ground floor)

**Organisers:** **Eszter Bánffy** (Hungarian Academy of Sciences, Hungary) and **Kurt W. Alt** (University of Mainz, Germany)

By the beginning of the 6th Millennium cal BC, the first farmers reached the Carpathian Basin where the last transition to food production and sedentary life took place. The early neolithic groups became restructured both in their cultural and genetic composition in the 6th and 5th Millennium BC, affected by at least five major Northern Balkan impulses. The western part of the area became a major communication zone, mediating between South Eastern and Central Europe. Our working group has been focusing on this early population history of Eastern Hungary and of Transdanubia, developing and comparing ancient DNA, stable isotope, osteological and archaeological data gained from not less than 600 neolithic skeletons (6000–4300 cal BC).

In the session we would like to give an account of the DNA and stable isotope (SR, N, C) analysis, carried out within the frames of a three-year interdisciplinary project funded by the German Research Foundation along with the co-evaluation of these results with osteology and zooarchaeology, as well as giving a comparative interpretation of this data within our present socioarchaeological knowledge.

##### F01.01: The genetic make-up of the Linear Pottery culture

by **Guido Brandt** (Johannes Gutenberg-University, Germany), **Wolfgang Haak** (University of Adelaide, Australia), **Harald Meller** (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany), **Robert Ganslmeier** (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany), **Susanne Friederich** (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany), **Alan Cooper** (University of Adelaide, Australia), **Kurt W Alt** (Johannes Gutenberg-University, Germany)

The Linear Pottery culture (LBK) is one of the first Central European Neolithic farming cultures marking the transition from a hunter-gatherer to a farming lifestyle. The LBK is thought to have originated from Early Neolithic cultures in the Carpathian Basin from where it extended across Europe over a vast distribution area spanning from the River Rhine to the Ukraine. Consequently, its role during the process of Neolithisation in Central Europe is subject of a long-standing debate in archaeology, anthropology and human genetics. Ancient DNA studies have provided direct insights into Mesolithic and Neolithic mitochondrial diversity indicating genetic discontinuity between Central Europe's autochthonous hunter-gatherers and LBK populations. Comprehensive population genetic analyses utilizing large databases of present-day populations have disclosed genetic affinities of the LBK to the modern-day Near East, Anatolia and the Caucasus, supporting genetic influx from this region into Central Europe at the advent of farming and explaining the apparent genetic discontinuity between foragers and farmers. We will summarize the inferences that have been drawn from 108 LBK data to provide an overview of genetic diversity of the first farming communities in Central Europe, which represents an invaluable genetic perspective for the discussion of the Neolithic in the Carpathian Basin.

##### F01.02: The study area and the archaeological concept of the sampling strategy

by **János Jakucs** (Hungarian Academy of Sciences, Research Centre for the Humanities, Hungary), **Éva Ágnes Nyerges** (Hungarian Academy of Sciences, Research Centre for the Humanities, Hungary), **Anett Osztás** (Hungarian Academy of Sciences, Research Centre for the Humanities, Hungary), **Tibor Marton** (Hungarian Academy of Sciences, Research Centre for the Humanities, Hungary), **Krisztián Oross** (Hungarian Academy of Sciences, Research Centre for the Humanities, Hungary), **Eszter Bánffy** (Hungarian Academy of Sciences, Research Centre for the Humanities, Hungary)

During the three years (2010-2012) of our archaeogenetic and isotope-chemical project we carried out several sampling campaigns, mainly in Hungary, but also in Croatia and Slovakia. As a result, nearly seven hundred individuals were investigated from more than seventy prehistoric sites of the Carpathian-basin. The sampled remains can be dated to the periods between the Mesolithic and the Middle Copper Age Bodrogkeresztúr and Lasinja cultures, nevertheless, the vast majority of our samples, more than six hundred individuals, can be dated to the 6th- and first half of the 6th Millennium BC, i.e., to the Carpathian Neolithic period.

To assess the most accurate archaeological background data of each investigated skeleton, regarding their cultural and chronological specifications, have been regarded as a cornerstone. Therefore, prior to the selection of the appropriate

anthropological material for further aDNA or isotopic assay, the archaeological contexts had been accurately given.

The present paper summarises the main stages of the project's archaeological coordination and the process of sampling, along with the archaeological contexts of the key sites involved in the research programme, and introduces the major archaeological aspects and questions, which determined our sampling strategy.

#### **F01.03: 6–5th millennium BC cultural changes in Western Hungary tested by ancient DNA**

by **Anna Szécsényi-Nagy** (Johannes Gutenberg University of Mainz, Germany), **János Jakucs** (Research Center for the Humanities, Hungarian Academy of Sciences, Hungary), **Eszter Bánffy** (Research Center for the Humanities, Hungarian Academy of Sciences, Hungary), **Kurt W. Alt** (Johannes Gutenberg University of Mainz, Germany)

Western Hungary (Transdanubia) was one of the key regions at the process of Neolithisation in Central Europe. The Starčevo culture, representing the earliest farmers on this region, settled down at latest 5750 cal BC south of the Lake Balaton. It had a major role in the formation of the Linearbandkeramik culture in Transdanubia. The following Sopot, Lengyel cultures of the late Neolithic and Early Copper Age Transdanubia show repeated cultural influences from the Balkan, besides local extant cultural traditions.

The focus of our study is the process of these cultural changes in Transdanubia, in the view of ancient DNA, investigating mitochondrial and Y chromosomal lineages and markers. A total of 292 skeletons were sampled and processed, with an overall success rate of 89% for mitochondrial DNA. Comparing the mitochondrial and Y chromosomal results with other published data and evaluating them with population genetic analyses, we gained a peerless insight into the population history of Western Hungary.

Our study may give an additional help to prehistoric archaeology, for a better understanding of the nature of cultural changes, supporting it with a new type of evidence, in order to see Transdanubia as a mediating area between South East and Central Europe.

#### **F01.04: The Same, but Different? The Neolithic Cultures of the Great Hungarian Plain**

by **Victoria Keerl** (Johannes Gutenberg University of Mainz, Germany), **János Jakucs** (Hungarian Academy of Sciences, Hungary), **Eszter Bánffy** (Hungarian Academy of Sciences, Hungary), **Kurt Alt** (Johannes Gutenberg University of Mainz, Germany)

The Linearbandkeramik (LBK) arose around 5500 BC in the Carpathian Basin in present-day Hungary. From its Western Hungarian origins (Transdanubia), the LBK quickly expanded further westwards, introducing the novel technologies of the sedentary Neolithic lifestyle, including agriculture and animal husbandry, to Central Europe.

To the east of the Transdanubian LBK, a contemporary group arose, replacing the preceding Körös culture on the Great Hungarian Plain: the Alföld LBK. Contrary to its western relative, the Alföld LBK remained within circumscribed geographical limits, eventually differentiating into various regional subgroups; it was succeeded by the late Neolithic Tisza culture.

The present study is part of a larger multidisciplinary project that aims to elucidate the Neolithic of the Carpathian Basin. Isotope and ancient DNA (aDNA) analyses are combined with archaeological and anthropological data to reconstruct the origin, development and interconnections of Neolithic populations from both regions (Transdanubia and Great Hungarian Plain). The diachronous nature of the study, which includes early, middle and late Neolithic cultures, allows us to track the complicated process of neolithisation through time as well as space.

This presentation will focus on what aDNA analysis reveals about the Neolithic cultures of the Great Hungarian Plain and their relationship with their western neighbours.

#### **F01.05: Isotope evidence of mobility and subsistence in Neolithic Hungary**

by **Marc Fecher** (Johannes Gutenberg University, Germany), **János Jakucs** (Hungarian Academy of Sciences, Hungary), **Eszter Bánffy** (Hungarian Academy of Sciences, Hungary), **Kurt W. Alt** (Johannes Gutenberg University, Germany)

The period between the Early Neolithic and the onset of the Copper Age (5550–4500 BC calibrated) within the Carpathian Basin and adjacent areas is characterized by distinct changes in many aspects of social organization, comprising settlement patterns, subsistence strategies, mortuary customs, and trade networks. The present study uses strontium isotope ratios ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) in dental enamel from human and faunal specimens to give further insight on the development of prehistoric settlement and mobility practices, as well as the distribution of cultural groups across the Neolithic

landscape of present-day Hungary. Additionally the proportions of stable carbon ( $\delta^{13}\text{C}$ ) and nitrogen ( $\delta^{15}\text{N}$ ) isotopes from human and non-human animal bone collagen samples were used to determine the extent to which presumable changes in land use, animal husbandry, and resource exploitation had an impact on ancient diet and subsistence.

For this purpose bone and teeth samples of several hundred individuals from Neolithic and Chalcolithic sites across the Carpathian Basin were analyzed. The results of these investigations are reconsidered in the light of recent developments in isotope research and new information on dating. It is shown that the collected data have implications for the interpretation of the Neolithic and the transition to Copper Age in Central Europe.

#### **F01.06: A case study from southeastern Transdanubia: Alsónyék-Bátaszék site (Hungary)**

by **Anett Osztás** (Hungarian Academy of Sciences, Research Centre for the Humanities, Hungary)

One of the target area of the multidisciplinary investigations discussed in the session is a recently discovered site in southeastern Transdanubia. This area was continuously inhabited from the Early Neolithic (ca. 5800 BC) to the end of the Late Neolithic (ca. 4500 BC). This involves a large Starčevo settlement with about 500 features and 30 graves, a considerable LBK settlement with the traces of about 20 long houses, and a grave group belonging to the Sopot culture. The prehistoric settlement attained its greatest extent during the Late Neolithic Lengyel period, as shown by over 100 post-framed buildings and 2359 burials. The site lies near the Danube, the main natural route, and also at the meeting point of two different regions, the Transdanubian Hills and the Great Hungarian Plain. On a larger scale, it lies on the boundary between the Neolithic populations of the northern Balkans and Central Europe. The geographical location and quantity of the archaeological and anthropological data of this site provide an excellent opportunity to study the main questions of this session.

#### **F01.07: Ancient DNA and isotope analysis of the Starčevo graves at Alsónyék-Bátaszék**

by **Anna Szécsényi-Nagy** (Institute of Anthropology, Germany), **Marc Fecher** (Institute of Anthropology, Germany), **Éva Agnes Nyerges** (Archaeological Institute, Hungary), **Eszter Bánffy** (Archaeological Institute, Hungary), **Kurt W. Alt** (Institute of Anthropology, Germany)

Between 2006 and 2009 at Alsónyék-Bátaszék a settlement with 26 graves of the Starčevo culture were unearthed. More than 400 various features belonged to this early Neolithic period on an extension of 80 hectares. The archaeological findings underline the significance of Alsónyék-Bátaszék, which is to date the largest Starčevo site uncovered in present-day Hungary.

We analysed the 26 Starčevo burials from Alsónyék from ancient DNA and stable isotopic aspects, involving them in our three-year bioarchaeological Neolithic project. The excellent DNA preservation made it possible to gain reproduced mitochondrial DNA results from all skeletons, and we could additionally type the Y chromosome in 5 of the male individuals. The strontium ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) and oxygen ( $\delta^{18}\text{O}_p$ ) isotopic data obtained an insight into the mobility and kinship system of the population. The carbon ( $\delta^{13}\text{C}$ ) and nitrogen ( $\delta^{15}\text{N}$ ) isotope analyses of the skeletons supported a basis for a diet reconstruction, supplementing the archaeozoological proceedings of the site.

Our results from the Alsónyék-Bátaszék Starčevo specimens, dated between ca. 5800-5500 cal BC, denote a milestone of the early Neolithic bioarchaeological studies in Transdanubia.

#### **F01.08: Alsónyék: anthropology, grave groups, investigating DNA of one grave group**

by **Kitti Köhler** (Research Center for the Humanities, Hungarian Academy of Sciences, Archaeological Institute, Hungary), **Aranka Csósz** (Research Center for the Humanities, Hungarian Academy of Sciences, Archaeological Institute, Hungary), **Balázs Mende** (Research Center for the Humanities, Hungarian Academy of Sciences, Archaeological Institute, Hungary)

Between 2006 and 2009 salvage excavations preceding the construction of the M6 Motorway, a Lengyel settlement and related cemetery of nearly 2400 graves were excavated at Alsónyék-Bátaszék, in Hungary. In this paper we would like to present the biological reconstruction of the northern part of the cemetery. Being a characteristic of the Lengyel mortuary practices, graves are usually found in grave groups occupying unused or already abandoned areas of the settlement. According to the traditional hypothesis, such spatial distributional patterns may correlate with family relations. These archaeologically outlined grave groups are investigated demographically and also by other methods (investigating hereditary anatomical variations and ancient DNA) to test whether these burials are reflections of a kinship based organization. In the presentation we give account of the first results. In the course of the investigation we made a palaeopathological analysis. The most significant result was the occurrence of tuberculosis. Within this work,



not only on the skeletal remains of the affected individual was investigated, but the skeletal remains of the entire grave group around, supplemented by aDNA analysis for *M. tuberculosis* complex.

**F01.09: The significance of DNA and isotope analysis in the Neolithic of the Carpathian Basin, within the frames of the Mainz-Adelaide multidisciplinary projects**

by **Kurt Werner Alt** (*Institute of Anthropology, Germany*)

Founded by grants from the German Research Foundation, anthropologists and archaeologists have been intensively working in three projects, with the population and settlement history of prehistoric Central Europe. Our first study region is the Middle Elbe-Saale region, in the heart of Europe, the second study region is the theme of our session: the Carpathian Basin, which played a key role in the early Neolithic settlement in Central Europe. The third region to study is the Iberian Peninsula, which most probably was the scene of a rather independent Neolithic cultural history, especially in comparison with the other two studied regions. The paper explains the coherent concept behind the projects. First, this concept involves an integrated multi-disciplinary approach of archaeological, anthropological, molecular, biochemical and geochemical methods. Second, our aim is an outlook at the Neolithization of Europe, by regarding not only the route from the Middle East through the Balkans towards Central Europe. We also try to clear how data from Hungary and Germany could be evaluated, in order fit them in a broader, pan-European understanding of population dynamics in the Neolithic.

Following this last presentation a concluding discussion of this session will take place (Discussant: K. W. Alt).

**POSTER**

**F01.01-P-3: The spread of domestic pig in the central and Eastern part of the Romanian territory described by the ancient mitochondrial DNA**

by **Monica Luca** (*"Alexandru Ioan Cuza" University, Romania*), **Simina Stanc** (*"Alexandru Ioan Cuza" University, Romania*), **Anna Linderholm** (*Durham University, UK*), **Greger Larson** (*Durham University, UK*)

Previous genetic analysis showed the presence of two different haplotypes for domestic pigs from 11 different sites in the South-Eastern part of Romania: the Near-Eastern haplotype ANC-Y1-5A, for 18 individuals, and ANC-Aside european haplotype, for 8 individuals. This study reveals the genetic signature for other 52 samples (5000–3500 BC, from 7 archaeological sites) covering the central and Eastern parts of Romania. After the DNA extraction, PCR, and sequencing, no ANC-Aside haplotype was found, but, apart from the Near-Eastern ANC-Y1-5A haplotype, identified in the majority of domestic pig samples, the european ANC-Cside haplotype (generally identified in the wild boars), was also found in three domestic pigs from Poduri, Ghigoesti and Trusesti. The wide spread of the wild boar with the ANC-Cside haplotype not only on the entire Romanian territory, but also, as previously shown, in its close proximity, and the emergence of this genetic signature in both wild and domestic pigs from three different sites could support the idea of a local domestication of the wild boar after 4500 BC, in this specific area.

*This work was supported by a grant of the Romanian National Authority for Scientific Research, CNCS–UEFISCDI PN-II-RU-TE-2011-3-0146.*

## Session F02

### Deciphering agricultural footprints: New multidisciplinary studies of human-environment interactions

Thursday, 5 September 2013, 14:00–18:30

Room: UU 307 (Building 2, 3rd floor)

**Organisers:** **Shawn A. Ross** (University of New South Wales, Australia), **Adéla Sobotková** (University of New South Wales, Australia), **Attila Gyucha** (Hungarian National Museum, Hungary) and **Amy Nicodemus** (University of Michigan, USA)

Changes in the natural environment have profoundly shaped human society, and people have had a significant impact on the environment. Detecting this impact, separating anthropogenic from natural processes, and assessing environmental effects on human activities, however, is not straightforward. People do not respond deterministically to environmental changes, while the environmental consequences of human activities can vary widely. Complex feedback loops exist between environmental and human systems. Assessing interactions between people and their environment requires a combination of diverse scientific and humanistic archaeological approaches.

This panel presents the results of the Tundzha Regional Archaeological Project (TRAP; [www.tundzha.org](http://www.tundzha.org)), an international, multidisciplinary campaign examining regional, diachronic human-environment interactions in the Thracian Plain, Bulgaria. We also invite submissions from other multidisciplinary projects across Europe. Our research indicates how environmental conditions combined with the practices of early farmers to shape the spread of (small-scale, intensive) agriculture beyond the Aegean. It also explores how economic and cultural developments led to much greater human impact on the environment in the Middle and Late Bronze Age – and how that altered environment in turn shaped subsequent societies. This story cannot, however, be reduced to a simple narrative of environmental “degradation” or “unsustainability” – the Thracian Plain has boasted a dense settlement network for at least the last three millennia and remains remarkably fertile to this day.

Attaining even a provisional understanding of the complexities of long-term human-environment interaction has required analysis of existing data from excavations, new research in landscape archaeology, and a range of scientific approaches (palynology, palaeobotany, geoarchaeology, environmental charcoal and soil magnetism studies, etc.). TRAP participants will present four 15-minute papers that combine these approaches to address major questions (rather than simply reporting results), and we solicit a similar number of papers from others to contextualise our work. Ample time for discussion will be provided.

#### F02.01: The environment of Neolithisation: constraints on the introduction of agriculture into Europe

by **Simon Connor** (Monash University, Australia), **Shawn Ross** (University of New South Wales, Australia), **Adela Sobotkova** (University of New South Wales, Australia), **Andy Herries** (La Trobe University, Australia), **Scott Mooney** (University of New South Wales, Australia), **Catherine Longford** (University of Sheffield, UK), **Iliia Iliev** (Yambol Regional Historical Museum, Bulgaria)

The expansion of agriculture into Europe was a gradual process. The first unambiguous farming settlements appeared in coastal Greece in the early Holocene, but it took almost 1000 years for agriculture to spread inland to areas such as Bulgarian Thrace. Several theories purport to explain this delay: 1) sea-level rise in the Black Sea; 2) difficulty of passage across the swamps of the Marmara basin; and 3) early-Holocene climatic conditions that constrained farming. Until now, the lack of good palaeoenvironmental records from early farming regions in Bulgaria has hindered resolution of this issue. Palaeoecological data from the Straldzha Mire (Yambol region; 138m a.s.l.), indicates that forest-steppe vegetation persisted on Bulgaria's Thracian Plain from approx. 8350 to 7000 BC, followed by the expansion of oak woods from approx. 7000 to 2000 BC. Further evidence from the nearby upland site of Skala Bog (470m a.s.l.) corroborates early Holocene aridity, with deciduous forest replacing pine woods after 7000 BC. Together this evidence suggests that dry climatic conditions limited the spread of agriculture into Balkan continental lowlands until about 6650 BC, after which small-scale, intensive, mixed farming expanded along with deciduous forests, producing a network of long-lived tells across the Yambol region.

#### **F02.02: Neolithic transitions and (pre)historical ecology in the Central Körös Area of eastern Hungary**

by **Roderick Salisbury** (University of Leicester, UK), **Gábor Bácsmegi** (Békés County Museum, Hungary), **Pál Sümegi** (University of Szeged, Hungary)

Throughout prehistory, we find evidence for human adaptation of the environment. This includes using technology to modify the environment to meet human needs and desires, as well as adjusting technologies and cultural traditions to accommodate new or changing environments. Furthermore, changes to the environment include both deliberate alterations, for example building dams, levees or irrigation channels to control water, and unintended alterations, such as increasing erosion and loss of soil fertility. Due to the temporal nature of these adaptations, we take an historical ecology approach to explore cultural transitions during the Central European Neolithic. Our combine archaeological and environmental findings from the central Körös area of eastern Hungary indicate changing environmental conditions, including changes in groundwater levels and complex shifts in both arboreal and herbaceous pollen concentrations. These changes played a role in decisions regarding the location, size and internal spatial organization of settlements, all of which changed during periods of cultural transition. Furthermore, we have documented anthropogenic changes to the local ecosystem that transformed the landscape and consequently resource availability. These factors may also be implicated in changes to subsistence economy, which are most obvious in the Early to Middle Neolithic transition.

#### **F02.03: First steps on a new continent: introduction, adaptation and exploitation of new animal taxa in early farming societies of Romania (6th–4th millennium cal. BC).**

by **Anne Tresset** (Centre National de la Recherche Scientifique, France), **Adrian Balasescu** (Muzeul Național de Istorie a României, Romania), **Stéphanie Bréhard** (Museum National d'Histoire Naturelle, France), **Thomas Cucchi** (Centre National de la Recherche Scientifique, France), **Morgane Olivier** (Ecole Normale Supérieure Lyon, France), **Amelie Scheu** (Johannes Gutenberg Universität, Germany), **Maud Pionnier-Capitan** (Museum National d'Histoire Naturelle, France), **Joachim Burger** (Johannes Gutenberg Universität, Germany), **Catherine Hänni** (Ecole Normale Supérieure Lyon, France), **Jean-Denis Vigne** (Centre National de la Recherche Scientifique, France)

The last ten years have seen the development of several international projects focusing on the origin, the diffusion and the adaptation of early domestic and commensal animals originating in south-west Asia to Europe. In the process of diffusion of taxa and farming techniques toward the Atlantic, south-east Europe constitutes an obligatory pathway. Remarkable preservation state of animal remains from Romanian Neolithic and Chalcolithic (6<sup>th</sup>–4<sup>th</sup> millennia cal. BC) has allowed an interdisciplinary work involving many fields of zooarchaeology and palaeogenetics to investigate these early steps of domestic and commensal animals on a new continent. These have led to the reconstruction of fine grain scenarios of introductions, population replacements as well as potential hybridizations with local populations for several taxa, especially (but not only) dog, cattle and to some extent house mouse. These have also provided numerous details on the aspect (size, cranial characteristics, skeletal proportions, but also coat colours...), the use (estimation of the quantities of milk and meat provided) and the management (kill-off strategies and herd dynamics) of these first European domesticated populations. This is probably the first time that so many data can be intertwined in order to document these essential aspects of the emergence of European farming.

#### **F02.04: Drowning landscapes: The role of inundation in the subsistence economy during the Early to Middle Holocene period in Flevoland (central Netherlands)**

by **Don van den Biggelaar** (Institute for Geo- and Bioarchaeology (IGBA), The Netherlands), **Sjoerd Kluiwing** (Institute for Geo- and Bioarchaeology (IGBA), The Netherlands), **Ronald van Balen** (Cluster of Climate Change and Landscape Dynamics, The Netherlands), **Kees Kasse** (Cluster of Climate Change and Landscape Dynamics, The Netherlands)

In the European loess zone the Mesolithic-Neolithic transition was faster compared to the coastal zone of the Netherlands. Why did it take so long (5300-4600 cal BC) for the hunter/fisher/gatherers in the Flevoland region to adapt to the Neolithic lifestyle, in contrast to the relatively rapid adaptation in the loess zone? This temporal difference cannot be solely explained by the “in-attractiveness” of this region for farming or “conservative” cultural attitude on the side of prehistoric societies. As postglacial sea-level rise caused large parts of Flevoland to inundate during the Late Mesolithic and Early Neolithic, the availability of natural resources also changed.

It is hypothesized that prehistoric hunter/fisher/gatherers selectively picked out the newly created coastal and estuarine environments, as these were rich in topographic gradients, contained a high biodiversity and had a dynamic but high carrying capacity. This in its turn will have resulted in a delayed transition to a Neolithic lifestyle. To test this hypothesis we have compared three areas in the Flevoland region with distinctive rates of relative sea-level rise. A striking feature in the comparison between the three selected areas is the major role of inundation for local subsistence strategies of hunter/fisher/gatherers during the long transition period.

#### **F02.05: Evidences of prehistoric vegetation disturbance in the central part of European Russia (satellite (MODIS) and pollen-based reconstructions)**

by Elena Novenko (Institute of Geography Russian Academy of Sciences, Russian Federation)

The present research aimed to assess Holocene woody cover densities and forest disturbance in European Russia using analogue-based methods of quantity reconstructions and one of the innovative approaches, which combines modern pollen datasets with remotely sensed vegetational indices. The accuracy of regional woody cover reconstructions was tested by leave-one-out cross-validation. The results of tests show that applied method can reproduce present day characteristics of woody cover in Europe rather satisfactory and it is sufficient for reconstruction of major changes in forest vegetation ( $R^2=0.57$  and Standart Error of Estimate 10.8%). Application of the best-modern-analogue technique to pollen data from central part of European Russia (Upper Don River basin) demonstrated that the changes in regional woody cover are appeared as a good tool for reconstruction of anthropogenic disturbance in the prehistoric time. Signals of anthropogenic changes in the vegetation and human-induced fires are clearly pronounced in the pollen and micro-charcoal records in the Neolithic and Bronze Ages, however human impact on plant cover was not significant until 2400 cal. yr. BP. Large-scale landscape changes and the degradation of natural vegetation occurred in the medieval time and become conspicuous over the last two centuries.

*The studies were supported by RFBS project № 11-05-00557.*

#### **F02.06: Tells to flat sites: Bronze Age settlement dispersal and extensive agro-pastoralism on the Thracian Plain, Bulgaria**

by Shawn Ross (University of New South Wales, Australia), Catherine Longford (University of Sheffield, UK), Simon Connor (Monash University, Australia), Andy Herries (LaTrobe University, Australia), Scott Mooney (University of New South Wales, Australia), Adela Sobotkova (University of New South Wales, Australia), Ilija Iliev (Yambol Regional Historical Museum, Bulgaria)

Archaeological and palaeoecological information suggests that initial (Neolithic) agriculture on the Thracian Plain was diverse and intensive, but occurred at a small spatial scale such that it had little detectable impact on the regional environment. Significant deforestation of the lowlands began only after approx. 2000 BC, lasting about a millennium. The development of extensive agro-pastoral regimes that utilised more land, combined with the advent of metallurgy as a significant economic activity, likely caused this deforestation. The new agro-pastoral regimes were characterised by increasingly mobile stock-breeding and the emergence of cattle as the dominant species, while metal production was spurred by Thrace's integration into long-distance trade networks. Partial and perhaps temporary recovery of lowland forest vegetation after approx. 1000 BC, followed by stability, imply that Bronze Age economic strategies were long-lasting, persisting through the Iron Age and Classical Eras with only minor modification. Survey results from the 2009–2011 seasons of the Tundzha Regional Archaeological Project (TRAP) indicate a two-phase settlement pattern consistent with these arguments. In the first phase, nucleated (tell) settlements appear to disperse into smaller (flat) villages in the Bronze Age. The second phase is marked by stability, with these villages persisting until at least the Roman era.

#### **F02.07: Political Economy and Animal Production: A View from the Maros Region**

by Amy Nicodemus (University of Michigan, USA)

Intensification and specialization are hallmarks of increasingly centralized and complex political economies. In Bronze Age Europe, these have been traditionally linked with the production and exchange of prestige goods, especially elaborate metalwork. Far less attention has been paid to how these operate within in the agro-pastoral sector. Regional study of animal economies within the Maros region (southeast Hungary/western Romania) show that production systems in autonomous village societies differ greatly from those in hierarchical polities. Decentralized societies tend to have animal economies that place greater emphasis on risk mitigation, being highly diversified and well adapted to the limitations of the local environment. In more centralized economies, there is increased focus on surplus production, which can be seen in husbandry systems that maximize production over stability. Surplus production can also be geared to more specialized or intensive strategies aimed for export. The distinctive organization of animal economies in decentralized and centralized groups within the Maros region can serve as a model to better understand variability in pastoral systems at a broader scale.

**F02.08: Soil evolution dynamics and cultural response: Transformation of habitation patterns in the southern Netherlands (1000 BC-500 AD)**

by [Sjoerd Kluiwing](#) (VU University Amsterdam, The Netherlands), [Nico Roymans](#) (VU University Amsterdam, The Netherlands)

Long-term archaeological data gathering in the southern Netherlands may deliver an interesting scale model that is suitable for the Pleistocene sand areas of the Northwest European Plain. On a micro-scale level it has become clear that Bronze Age and Iron Age farmers intensively used the landscape, resulting in relatively dense distribution patterns of settlements all over the sand plateaus. However, this agricultural use of the landscape – related to the ‘celtic field’ system – led to a process of soil degeneration during which initially brown moder podzols gradually transformed into degenerated humus podzols that could no longer be used as farmland.

Measured loam values of soil samples (n=181) in Veldhoven, southern Netherlands, are in agreement with the described model that the *plaggen* cover is located on soils containing high loam% and that humus podzols of former heath areas have low loam content. Local spatial as well as vertical variations in loam content of sand layers is shown to occur, warning against single parameter research. Other potential causes for the deviation of the model are: a) impact of fluctuating groundwater, b) grain size and transmissivity of the sediments, c) organic matter content, d) land management and e) palaeo-climate change.

**F02.09: Arable productivity and site catchments in the Kazanlak Valley, Bulgaria**

by [Robbie Bishop-Taylor](#) (University of New South Wales, Australia), [Adela Sobotkova](#) (University of New South Wales, Australia)

Site catchment analysis has a long history in archaeological studies. It has been used to explore a wide range of topics from changing land use patterns to socio-political organization. In this paper we discuss the results of site catchment analysis applied to the Late Bronze Age, Iron Age, and Roman eras in the Kazanlak Valley, Bulgaria, especially the evolving relationship between past inhabitants and their environment. Combining geoarchaeological data, geographic modelling, and multivariate cluster analysis, this study develops a quantitative potential arable productivity model for the cultivation of wheat and barley. We contextualise this model with settlement data produced through systematic surface survey conducted by the Tundzha Regional Archaeological Project (TRAP). Arable productivity proved to be a significant factor controlling the location of settlements within the study area during all periods except for the Early Iron Age. Multivariate cluster analysis produced three distinct productivity-based site classifications, and successfully delineated strategic site locations from those chosen based on agricultural potential. This study demonstrates how catchment analysis can reveal the factors determining human habitation in later prehistory. This arable productivity model also provides one of the inputs for site catchment analysis.

**F02.10: Iron Age Settlement Patterns and Subsistence Strategies in the Kazanlak Valley, Bulgaria**

by [Adela Sobotkova](#) (University of New South Wales, Australia), [Robbi Bishop-Taylor](#) (University of New South Wales, Australia)

During surface survey, the Tundzha Regional Archaeological Project (TRAP) identified a network of surface concentrations across the Kazanlak valley. Subsequent trial excavations revealed that the sites associated with these concentrations represented short term and shifting habitations, a pattern observed elsewhere in Bulgaria during later prehistory. Scholars have interpreted the frequency of single-phase sites and the absence of structures built from durable materials as signs of increasing mobility in previously sedentary populations. The settlements explored by TRAP often gravitated towards particular topographic areas, indicating that habitation, while shifting, does display patterns over time. In order to understand these patterns and their relationships to subsistence strategies, this paper uses data from surface survey, soil geochemistry, and ethnography to model the footprints of various agro-pastoral regimes, from pure cereal agriculture to pure stockbreeding. We calculate the extent of land required by various strategies to support settlements of the size revealed by survey and subsequent excavation, in light of likely productivity, as calculated from a dynamic arable productivity model. We conclude by assessing which subsistence models best correspond to the observed settlement patterns during the first millennium BC.

## POSTERS

### **F02.01-P-3: A human-environment interaction in relation to the development and distribution of freshwater dolomite deposits**

by **Rozália Kustár** (Viski Károly Museum, Hungary), **Réka Balázs** (Kiskunság National Park, Hungary), **Sándor Gulyás** (University of Szeged, Hungary), **Pál Sümegi** (University of Szeged, Hungary)

Via integrating sedimentological, paleoecological, paleoclimatological, chronological, geomorphological, archaeological and ethnographic data implemented so far in the Hungarian Great Plain we develop an electronic database, which could serve the accurate spatial delineation and thus conservation of this unique geological deposit. The topographical part of the database contains geographical location data of the freshwater limestone deposit. Geological information records depth, thickness, age, visual and thin-section parameters, chemical composition of the deposit. The paleoecological part embraces data on fauna, flora, especially those taxa which are marker and proxy elements for paleoclimatological reconstructions of the Holocene. Special attention would be paid to consider taxa marking human influences on the paleoenvironment. The geomorphological database entails information also on those of the past discussing changes that occurred as a result of wind-blown sand movement and alkalization of the soil and near surface deposits. Mapping joint cultural heritage, answering the question in archaeological and ethnic aspects – identifying the old stone-cutter sites and the usage of the limestone (archaeological sites, built heritage).

### **F02.02-P-3: An importance of Neolithic-Early Dynastic – the end of Old Kingdom transition in Ancient Egypt. Geoarchaeological evidences of climatic oscillations.**

by **Maciej Pawlikowski** (AGH University of Science and Technology, Poland), **Marcin Szymanowicz** (Jagiellonian University, Poland)

Due to importance of Neolithic-Old Kingdom transition the future geoarchaeological survey in Nile Delta is discussed. Route leads across geziras. There are geoarchaeological data, which is documentation of climatic phenomenon between 4 000 and 2 200 B.C. Climatic oscillations are regarded as the main reason of society changes at North-Eastern Africa and Near East.

One of the important factors of human activity is climate. Geological investigation suggest the presence of climatic swing. It is observed in reduction of Moeris Lake's size, lower Nile floods. It suggests short-time dry climatic phase. It led to desertification and rivers' reduction. It was a reason for human activity changes – large-scale migration, new economy, irrigation.

Research confirmed that the end of Old Kingdom in Egypt should be connected with period of heavy rainfalls and higher Nile floods. It had great impact on agriculture and living conditions, caused further changes in settlement and economy.

Determination of mentioned climatic phenomena details is elemental to understand past human activity and transition between Neolithic and Early Dynastic and the end of Old Kingdom. Examination of this period is possible using geological and archaeological methods. Most interesting and important places for such investigation are located at geziras in Nile Delta.

## Session F03

### EAA-Executive Board sponsored session: Isotopes and aDNA – Windows on the Past

Friday, 6 September 2013, 08:30–16:00

Room: UU 108 (Building 2, ground floor)

**Organisers:** T. Douglas Price (University of Aarhus, Denmark) and Corina Knipper (Mainz University, Germany)

This session on archaeological science, sponsored by the EAA, will focus on recent developments in aDNA and the application of isotopic analysis to archaeological materials. These areas of research in recent years have provided exceptional new information on human characteristics and behavior in the past. Isotopic studies will focus on questions of mobility and will in some cases be combined with aDNA information on genetic relationships among individuals.

#### F03.01: Neolithic Iberia – what ancient DNA can tell us

by **Christina Roth** (Johannes Gutenberg University, Germany), **Manuel A. Rojo Guerra** (University of Valladolid, Spain), **Rafael Garrido Pena** (Autónoma University, Spain), **Iñigo García Martínez de Lagrán** (Basque Government, Spain), **Cristina Tejedor Rodríguez** (University of Valladolid, Spain), **Kurt W. Alt** (Johannes Gutenberg University, Germany)

The Neolithic lifestyle developed in the Near East about 12,000 years ago and spread in the following millennia into Central Europe and the Iberian Peninsula via different routes. A recurring question in archaeology and anthropology remains whether the Neolithisation was a transfer of ideas without genetic influence or was accompanied by population shifts. Ancient DNA studies provide an essential tool for understanding past human population movements by opening a genetic window directly into the past. Previous studies have revealed a replacement of most of the pre-Neolithic maternal gene pool in Central Europe by substantial genetic influx of early farmers of the *Linear Pottery Culture*. Contemporaneous ancient DNA data from the Iberian Peninsula suggest that a considerable amount of characteristic *Linear Pottery Culture* lineages also spread through the Mediterranean region, although at least in Spain and Portugal a larger fraction of hunter-gatherer lineages was retained. Here, we present an enlarged mitochondrial dataset of the Early and Later Iberian Neolithic to reveal a more detailed picture of the spatial and temporal distribution of Neolithic farmers across the Iberian Peninsula.

#### F03.02: Ancient DNA discloses multiple migrations into Central Europe during the Neolithic

by **Guido Brandt** (Johannes Gutenberg-University of Mainz, Germany), **Wolfgang Haak** (University of Adelaide, Australia), **Robert Ganslmeier** (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany), **Susanne Friederich** (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany), **Christina Adler** (University of Sydney, Australia), **Christina Roth** (Johannes Gutenberg-University of Mainz, Germany), **Anna Szecsenyi-Nagy** (Johannes Gutenberg-University of Mainz, Germany), **Alan Cooper** (University of Adelaide, Australia), **Harald Meller** (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany), **Kurt W. Alt** (Johannes Gutenberg-University of Mainz, Germany)

The Central European Neolithic is characterised by a succession of differentiated archaeological cultures indicating a period of fundamental cultural change. A recurrent question in archaeology and anthropology is whether cultural change in prehistory was accompanied by variation in the gene pool of associated populations. Ancient DNA studies based on mitochondrial DNA revealed a discontinuity between Central Europe's autochthonous hunter-gatherers and their early farmers and between the latter and the present-day population, suggesting further migration events after the initial Neolithisation. However, to date little attention has been drawn to cultural and potentially population changes in subsequent Neolithic periods. To investigate this issue, we conducted a large chronological study including a succession of nine cultures from the Mittelbe-Be-Saale region, Saxony-Anhalt, Germany to reconstruct a detailed temporal profile of cultural and genetic diversity in Central Europe. The presented diachronic study spans overall 3,950 years from the beginning of the Neolithic period and the introduction of producing subsistence strategies ~5,500 BC to the appearance of structured chiefdoms in the Early Bronze Age ~2,200–1,550 BC. This transect through time identified multiple population dynamic events during the Neolithic, which involved genetic influx from various regions in Europe.

### **F03.03: Recent advances in ancient DNA studies shed light on the population history of prehistoric Europe**

by Hannes Schroeder (Natural History Museum of Denmark, Denmark)

Recent technological advances in ancient DNA studies are starting to shed light on crucial episodes in the population history of prehistoric Europe, including our relationship with our closest cousins, the Neanderthals, the transition from hunting and gathering to farming at the onset of the Neolithic, and later population movements. In this paper I present a review of recent studies and discuss some of the more significant technological developments in detail.

### **F03.04: Isotopic provenancing strategies for historical artefacts composed of organic raw materials**

by Isabella von Holstein (BioArCh, University of York, UK), P. Walton Rogers (The Anglo-Saxon Laboratory, UK), O. E. Craig (BioArCh, University of York, UK), K. E. H. Penkman (BioArCh, University of York, UK), J. Newton (Scottish Universities Environmental Research Centre, UK), M. J. Collins (BioArCh, University of York, UK)

A light stable isotope approach to provenancing sheep tissues was developed to examine long-distance movement in medieval wool textiles in the North Sea region, the production and trade of which was of significant economic and social importance. The results of combined carbon ( $\delta^{13}\text{C}$ ), nitrogen ( $\delta^{15}\text{N}$ ), un-exchangeable hydrogen ( $\delta^2\text{H}$ ) and oxygen ( $\delta^{18}\text{O}$ ) analyses were interpreted together with artefactual data on the typical/atypical nature of each find sampled, to examine Sr/movement of raw wool and finished textiles at five locations in the British Isles, Iceland, Sweden and northern Germany.

This presentation will describe the experimental approach adopted, which included analyses of samples from modern sheep flocks and from experimentally degraded textiles to establish the resolution of the region's isoscape and the molecular nature of archaeological keratin. Some strontium ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) data from the same samples will also be discussed. The presentation will critically examine how isotope and artefact data can be integrated, focusing on how this approach could be expanded to other regions (e.g. North Atlantic, Baltic Sea, European continent) and to other raw materials (leather, parchment, silk, bone, antler). It will show how studies focusing on material from historical periods are useful for the development of new scientific techniques in archaeology, and explore the fundamental importance of understanding diagenetic trajectories.

### **F03.05: Walking on eggshells: new insights from old bird eggs**

by John Stewart (University of York, UK)

Although eggshell is common at many archaeological sites, the lack of an accessible, high-throughput analytical technique capable of analysing whole assemblages has led to underuse of the material. Recently, a variant of ZooMS (Zooarchaeology by Mass Spectrometry) has been developed to address this shortcoming, and to provide a rapid and reliable system for taxonomic identification of archaeological eggshell fragments. This paper will introduce the new technique, before describing some of the key insights gained from initial research into egg use in the past. Results obtained from eggshell assemblages from Viking age York will be compared and contrasted with those from contemporaneous coastal and island settings in northern Scotland. The key themes developed will be the extent to which wild and domestic species were utilised, and the potential use of the eggshell of certain species as an index of the relative status of areas within a site (or between closely related sites).

### **F03.06: Investigating childhood dietary variation using stable isotope analysis of incremental dentine sections**

by Julia Beaumont (Geographical and Environmental Sciences, Bradford University, UK), Janet Montgomery (University of Durham, UK)

In human permanent teeth dentine is secreted and fully mineralized in approximately 3–8 days (Dean and Scandrett 1995): because the age at which teeth develop is well-established (Hillson 1996), high temporal resolution can be achieved when constructing isotopic profiles for  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  from dentine. Incremental dentine collagen sampling offers the opportunity to investigate childhood dietary variation in individuals who survived childhood, avoiding the need to consider pathological changes in the period immediately prior to death, i.e. the "osteological paradox" (Wood et al., 1992). Comparison of the isotopic profile of individuals who survived childhood can be made with those who did not, to investigate dietary and metabolic differences over the same age range.

Deciduous and permanent teeth from sites in the British Isles ranging from prehistoric to 19th century were investigated. Results are presented and compared to evaluate the potential information contained within dentine for dietary studies and investigating the effect of stress on the individual. The profiles reveal variations in the isotope ratios



consistent with expected dietary variation, however, they also suggest evidence for physiological variation in nitrogen isotopes. The differences between individuals who died and those who survived may allow interpretation of the health of individuals in childhood.

#### **F03.07: Investigating Funnelbeaker dietary patterns using $^{14}\text{C}$ as a dietary tracer**

by **Ricardo Fernandes** (Christian-Albrechts-Universität, Germany), **Marie-Josée Nadeau** (Christian-Albrechts-Universität, Germany), **Pieter M. Grootes** (Christian-Albrechts-Universität, Germany)

The process of Neolithisation is marked by a transition in the mode of subsistence with the domestication of plant and animal species, leading to a more or less gradual replacement of previously dominant hunter-gatherer practices by farming and pastoralism. Here, we investigate the continuity of certain hunter-gatherer practices, namely the exploitation of aquatic food resources within the Funnelbeaker culture (ca. 4100–2800 BCE) in Central and Northern Europe.

A brief review of the different types of evidence pointing to exploitation of aquatic resources during the Neolithic will be presented together with recently obtained radiocarbon evidence. Comparative radiocarbon measurements of humans and associated artefacts from a closed secure context provide an optimal marker for fish consumption in regions where aquatic reservoirs are depleted in  $^{14}\text{C}$ . In these regions, human consumption of aquatic foods will result in fictitiously older radiocarbon ages when compared with associated terrestrial material. Such an approach has been applied to several inland German Funnelbeaker sites. For these sites, considerable radiocarbon age offsets demonstrate that significant amounts of aquatic foods were consumed by Neolithic populations.

#### **F03.08: Strategic and sporadic marine consumption at the onset of the Neolithic: increasing temporal resolution in the human isotope evidence**

by **Janet Montgomery** (Durham University, UK), **Julia Beaumont** (University of Bradford, UK), **M. Jay** (Durham University, UK), **K. Keefe** (York Osteoarchaeology, UK), **A. R. Gledhill** (University of Bradford, UK), **G. T. Cook** (Scottish Universities Environmental Research Centre, UK), **S. J. Dockrill** (University of Bradford, UK), **N. D. Melton** (Durham University, UK)

Stable isotope analyses of Mesolithic and Neolithic human bone collagen from northern and western Europe indicate a cessation of marine food consumption at the onset of the Neolithic (Tauber 1981; Richards et al. 2003). We reconstructed the diet of early Neolithic agriculturalists from the Shetland Isles, Scotland using progressively higher-resolution  $\delta^{13}\text{C}$  and  $\delta^{15}\text{N}$  measurements of bone, bulk dentine and incremental dentine. Results indicate short-term, sporadic consumption of marine resources, perhaps in response to crop failure, rather than long-term supplementation. These results may shed light on the apparent paradox between human isotopes and the archaeological evidence for ecofacts at coastal sites.

#### **F03.09: Small burial sites on the early Bajuvarian territory: Representative of social elites?**

by **Gisela Grupe** (Ludwig-Maximilian-University, Germany), **Michaela Harbeck** (Bavarian State Collection of Anthropology and Palaeoanatomy, Germany), **Andreas Rott** (Bavarian State Collection of Anthropology, Germany)

After 500 AD, a new burial type emerged in Southern Germany, characterized by a small number of inhumations, frequently equipped with grave goods of outstanding wealth. According to archaeological hypotheses, the inhumations could have been members of a social elite. By stable isotope and aDNA-analyses applied to the skeletal finds, the following questions are addressed: Are there biological correlates to the assumed social status? Were the dead immigrants? Do genealogical relationships exist among the buried? Focus of this contribution is an outstanding burial site at Unterhaching/Bavaria. The results give rise to new perspectives regarding the interpretation of these burial sites.

#### **F03.10: Tragic life story from the Bronze Age: isotope evidence from the Eurasian steppes**

by **Natalia Shishlina** (State Historical museum, Russian Federation), **Yulia Larionova** (IGEM RAS, Russian Federation)

A mass grave at the Peschany contained skeletons of a male and children. We performed analysis of  $^{13}\text{C}$ ,  $^{15}\text{N}$  and  $^{14}\text{C}$  and from seven human bone samples as well as identified  $^{87}\text{Sr}/^{86}\text{Sr}$  values in human enamel. The isotope analyses of humans show very high values of  $^{13}\text{C}$  and  $^{15}\text{N}$ . We assume that some of humans consumed marine food.

$^{87}\text{Sr}/^{86}\text{Sr}$  ratios in human enamel vary from 0.7092 to 0.7094 and differ from the  $^{87}\text{Sr}/^{86}\text{Sr}$  value obtained from local snails, soil and water (0.7085–0.7089).

Data obtained are used as to substantiate a hypothesis stating that a group of children accompanied by an adult male “mentor” was brought to the steppe. All of them were born outside the Rostov steppe. It is possible that they spent some time near the Black Sea coastline. When on the steppe, they must have met some strangers who carried weapons. The man was killed. The type of the bone arrowhead indicates that the strangers apparently came from the Volga region. All children were also killed.

Therefore, isotope data prove a high mobility of the population and contain stories about individuals.

### **F03.11: Diet and mobility at a Celtic central site: Isotope studies on human and faunal remains from Basel-Gasfabrik, Switzerland**

by **Corina Knipper** (Mainz University, Germany), **Sandra Pichler** (Basel University, Switzerland), **David Brönnimann** (Basel University, Switzerland), **Hannele Rissanen** (Archäologische Bodenforschung Basel-Stadt, Switzerland), **Norbert Schipf** (Archäologische Bodenforschung Basel-Stadt, Switzerland), **Barbara Stopp** (Basel University, Switzerland), **Marlu Kühn** (Basel University, Switzerland), **Kurt W. Alt** (Mainz University, Germany)

Basel-Gasfabrik (c. 150–80 BC) was a La Tène proto-urban central site at the south-eastern edge of the Upper Rhine Graben in Switzerland. Extensive excavations over the last hundred years revealed two cemeteries with inhumation burials. In addition, settlement features, such as pits, ditches, or wells yielded a wealth of archaeological artefacts as well as complete or partial human skeletons and numerous isolated bones and skulls. These varied burial or deposition practices raise questions about the Celtic population: about their living conditions, dietary habits, economic practices and land use patterns, as well as their origin and connections to other communities at different scales of distance. These and further questions are currently addressed in an interdisciplinary project that combines archaeological and bioarchaeometric analyses. The presentation will introduce the overall project with a focus on initial results of carbon and nitrogen as well as strontium and oxygen isotope analyses.

### **F03.12: The multiple burial of Salzmünde, Saxony-Anhalt, Germany. Bioarchaeometric investigations of an unusual interment of the 4th millennium BC**

by **Marcus Stecher** (Johannes Gutenberg University Mainz, Germany), **Christian Meyer** (Johannes Gutenberg University Mainz, Germany), **Corina Knipper** (Johannes Gutenberg University Mainz, Germany), **Sarah Karimnia** (Johannes Gutenberg University Mainz, Germany), **Frank Ramsthaler** (University of Saarbrücken, Germany), **Björn Schlenker** (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany), **Susanne Friederich** (State Office for Heritage Management and Archaeology Saxony-Anhalt, Germany), **Kurt W. Alt** (Johannes Gutenberg University Mainz, Germany)

Recent excavations at Salzmünde near Halle/Saale (Saxony-Anhalt, Germany) revealed a double-ditched earthwork and numerous burials, partial skeletons, and isolated bones of the Middle Neolithic Salzmünde culture (3400–3025 cal. BC). Among the most noteworthy features are the so-called “Scherbenpackungsgräber”, inhumation burials that are covered by several decimeter thick layers of fragmented ceramics and daub. One of these interments contained four adult women and five infants. Each of the adults faced one of the children, while the bones of the youngest child were found in the pelvis region of one of the women. All the adults and some children exhibit fragmented or missing extremities and/or skulls and revealed traces of fire. The formation of this arrangement as a result of a catastrophe or a ritual is currently investigated within an interdisciplinary research project. The presentation will focus on the bioarchaeometric examination of this outstanding burial in the context of the whole site. aDNA analyses revealed possible maternal kinship relations, carbon and nitrogen isotope ratios indicate above-average access to animal protein of the women, and strontium isotope analyses identified one outsider, while all other tooth enamel data fall into a rather narrow range.

### **F03.13: Bioarchaeometric investigations ( $87\text{Sr}/86\text{Sr}$ and $\delta 18\text{O}$ ) of the La Tène burial community of Münsingen-Rain, Switzerland**

by **Miriam Scheeres** (Mainz University, Germany), **Corina Knipper** (Mainz University, Germany), **Martin Schönfelder** (Römisch-Germanisches Zentralmuseum Mainz, Germany), **Maya Hauschild** (Institute of Pre- and Protohistoric Archaeology Mainz, Germany), **Wolfgang Siebel** (Tübingen University, Germany), **Kurt W. Alt** (Mainz University, Germany)

The historical and archaeological records indicate population movements of the Celts at around 400 BC. As the extent of these migrations is hitherto unknown, sixteen burial sites from the Celtic core and expansion areas are currently investigated using archaeological and bioarchaeometric analyses. This presentation introduces strontium and oxygen isotope data from the early to middle La Tène cemetery of Münsingen-Rain (Switzerland) in the core area. A remark-

able characteristic of the burial community is hereditary cranial deformations of most of the individuals.  $^{87}\text{Sr}/^{86}\text{Sr}$  ratios are in most cases in agreement with local comparative data, but slightly more variable among the males than the females. The  $\delta^{18}\text{O}$  values are less homogeneous and probably reflect variable drinking water sources, some of which fed by Alpine rivers and springs. Especially the later formed teeth of the males tend to have more depleted  $\delta^{18}\text{O}$  values, which may reflect differing daily activities, e.g. the practice of transhumance. Although the site probably played an important role in sustaining contacts between the transalpine and Mediterranean region, the isotope data give only few indications for such connections.

### **F03.14: Hands across the water – Isotopic evidence for the Norse colonization of the North Atlantic**

by **T. Douglas Price** (*University of Aarhus, Denmark*)

One of the most remarkable events of the late prehistory of northern Europe was the Norse, or Viking colonization of the North Atlantic. From early settlements in the British Isles to the extraordinary voyages to the Faroes, Iceland, Greenland, and North America it is a fascinating saga. One of the intriguing questions regarding this expansion concerns the settlers themselves and their origins. The Icelandic Sagas and other documents refer to Western Norway as the homeland of these explorers but other lines of evidence suggest that there were a number of other areas in northwest Europe represented among the first inhabitants of those distant places. This study will summarize the isotopic and genetic evidence that has come available in recent years as it pertains to the origins and movement of the first settlers of the North Atlantic.

## Session F04

### Human DNA and Archaeology

Saturday, 7 September 2013, 14:00–18:30

Room: EU 102 (Building 1, ground floor)

**Organisers:** **Phillip Endicott** (Musée de l'Homme, France), **Eliska Podgorna** (Institute of Archaeology, Czech Republic) and **Viktor Cerny** (Institute of Archaeology, Czech Republic)

Understanding the relationship between people and material culture remains a core issue in Archaeology. Whilst the recovery of degraded DNA from human skeletal material offers important insights into populations in the past, to be effective, studies require a large number of well-preserved samples and the production of reliable sequence data. Recent methodological and technical developments in the field of ancient DNA suggest that it is now possible to meet both these requirements in some cases, provided care is taken to avoid contamination of samples and extracts. Nevertheless, not all DNA results are equal and the authenticity of published data is still difficult to ascertain by the lay reader. This session aims to provide an explanation of the current potential and limitations of ancient human DNA studies, using a range of case studies. It also hopes to promote better inter-disciplinary understanding leading to improved project planning and execution. Together with the ancient DNA studies the archaeogenetics deals today also with the genetic diversity in the contemporary human populations revealing important demographic events in the past and their relations with changes of subsistence patterns in the Neolithic. These studies significantly improved our current understanding of the human population history not only in Europe but on a world-wide scale.

#### **F04.01: Museum Collections and DNA preservation: quality control and authentication by PCR-based methods**

by **Phillip Endicott** (Musée de l'Homme, France), **Christiane-Maria Bauer** (Innsbruck Medical University, Austria), **Régis Debryne** (Museum Nationale d'Histoire Naturelle, France), **Walther Parson** (Innsbruck Medical University, Austria)

The application of criteria for the authentication of ancient human DNA results is not always appropriate. PCR (Polymerase Chain Reaction) based ancient DNA methodologies are particularly prone to the generation of inauthentic sequence variation and the preferential amplification of contaminant DNA, when present. If human samples are European in origin and Holocene in age, distinguishing between endogenous sequences and contaminants may not be possible from the data alone. Here, we report the investigation of DNA survival and recovery from human remains collected during the 19th century in New Zealand and curated in the Museum of France collections. The endogenous DNA of these much handled Maori heads being clearly distinguishable from any European contaminants, allowed a precise evaluation of its quantity and quality. Despite displaying similar levels of bone preservation the heads produced a wide range in levels of DNA survival, and there was no consistent relationship between amounts of mitochondrial and nuclear DNA present. The methods used demonstrate that their systematic application to human DNA extracts can be highly effective for predicting the likelihood of retrieving authentic and accurate human sequence data. The results indicate that museum collections of human skeletal material represent a potentially important resource for bioarchaeology.

#### **F04.02: Molecular genetic investigations on Austria's patron saint Leopold III**

by **Walther Parson** (Innsbruck Medical University, Austria), **Christiane Maria Bauer** (Innsbruck Medical University, Austria), **Martin Badner** (Innsbruck Medical University, Austria), **Harald Niederstätter** (Innsbruck Medical University, Austria), **Daniela Niedervieser** (Innsbruck Medical University, Austria), **Gabriela Huber** (Innsbruck Medical University, Austria), **Petra Hatzer-Grubwieser** (Innsbruck Medical University, Austria), **Karl Holubar** (Monastery of Klosterneuburg, Austria)

The successful marriage policy of margrave Leopold III increased the importance of the House of Babenberg in late medieval Austria (12th century). Historical documentation is inconclusive in providing evidence whether or not his eldest son Adalbert derived from an earlier relationship or from the marriage with King Henry IV's daughter Agnes of Waiblingen, with whom Leopold is considered to have had 17 children. As a matter of fact Adalbert was ignored in the line of succession in favor of a younger brother, Leopold IV, which has led to long term historical discussions. Human remains attributed to these individuals were subjected to DNA analysis.

Autosomal, Y-chromosomal and mitochondrial DNA analyses brought successful results, which suggested that Leopold III, Agnes and Adalbert were related in parent–son constellation, in contrast to historical considerations. A possible mix-up of Adalbert's remains with those of his younger brother Ernst could not be confirmed by DNA analysis. The positive result for parent-sibling relation allows a detailed evaluation of the authenticity of the DNA profiles.

#### **F04.03: Neolithic Mitochondrial Genomes Reveal Complex Europe-Wide Human Population Dynamics**

by **Paul Brotherton** (Huddersfield University, UK & University of Adelaide, Australia), **Wolfgang Haak** (University of Adelaide, Australia), **Jennifer Templeton** (University of Adelaide, Australia), **Guido Brandt** (Johannes Gutenberg University Mainz, Germany), **Julien Soubrier** (University of Adelaide, Australia), **Christina Adler** (University of Adelaide, Australia), **Stephen Richards** (University of Adelaide, Australia), **Clio Der Sarkissian** (Natural History Museum of Denmark, Denmark & University of Adelaide, Australia), **Robert Ganslmeier** (State Museum for Prehistory Halle, Germany), **Susanne Friederich** (State Museum for Prehistory Halle, Germany), **Veit Dresely** (State Museum for Prehistory Halle, Germany), **Mannis van Oven** (University Medical Centre Rotterdam, The Netherlands), **Rosalie Kenyon** (SA Pathology, Adelaide, Australia), **Mark B. Van der Hoek** (SA Pathology, Adelaide, Australia), **Jonas Kralch** (Pacific Biosciences, USA), **Khai Luong** (Pacific Biosciences, USA), **Simon Y. W. Ho** (University of Sydney, Australia), **Lluís Quintana-Murci** (Institut Pasteur, France), **Doron M. Behar** (Rambam Medical Centre, Israel), **Harald Meller** (State Museum for Prehistory Halle, Germany), **Kurt W. Alt** (Johannes Gutenberg University Mainz, Germany), **Alan Cooper** (University of Adelaide, Australia) & **The Geographic Consortium**.

To what extent were cultural and economic changes identifiable in the archaeological record due to the movement of people or just their ideas and artefacts? We developed new methodologies to sequence whole mitochondrial genomes from Central European human remains from the earliest Neolithic farmers (~5450 BC) to the socially stratified chiefdoms of the Early Bronze Age (~2200 BC). These genomes let us examine in 'real-time' processes that may since have been obscured by subsequent population changes. We focussed on mitochondrial haplogroup (hg) H as it is fundamental to understanding the settlement history of Europe (up to 45% of Europeans belong to hg H today). By dissecting hg H whole mitochondrial genome sequences diachronically, we show that cultural change in the archaeological record is accompanied: (1) by strong genetic discontinuities between Early Neolithic and later Central European populations; (2) by substantial genetic continuity from the Mid Neolithic to the present-day in Central Europe; and (3) by population fusion and acculturation events during the Late Neolithic. Our data reveal complex and dynamic changes during key stages in the formation of Europe's mitochondrial DNA pool and support Near-Eastern and Iberian genetic homelands for pan-European Neolithic cultures.

#### **F04.04: Working with ancient DNA from modern humans: an example of Neolithic farmers and hunter-gatherers in Scandinavia**

by **Mattias Jakobsson** (Uppsala University, Sweden)

Contamination from human sources is a distinct challenge for working with ancient DNA from modern human remains. I will outline strategies to handle this issue using bioinformatics approaches. As a case study, I will discuss genomic data from 5,000 year old human remains from Scandinavia that illuminate the impact of the agricultural revolution on demography and patterns of genomic variation in Europe. We generated 249 million base pairs genomic DNA from remains of three hunter-gatherers and one farmer. Using new approaches for studying population structure using low-coverage genomic data, we find that the farmer is genetically most similar to extant southern Europeans, contrasting sharply to the hunter-gatherers whose unique genetic signature is most similar to extant northern Europeans. We use nucleotide miss-incorporation patterns in the data to show that this result is not affected by modern human contamination, and apply admixture models of population history to investigate the potential impact of the Neolithization on European genetic variation. Our results suggest that migration from southern Europe catalyzed the spread of agriculture, and that admixture in the wake of this expansion eventually shaped the genomic landscape of modern-day Europe.

#### **F04.05: Spatial analysis of a French Neolithic necropolis (Gurgy 'Les Noisats'): Paleogenetic data and archaeological evidence**

by **Maïte Rivollat** (Université Bordeaux 1, France), **Melie Le Roy** (Université Bordeaux 1, France), **Fanny Mendisco** (Université Bordeaux 1, France), **Marie-Helene Pemonge** (CNRS, France), **Clement Coutelier** (Université Bordeaux 3, France), **Christine Couture-Veschambre** (Université Bordeaux 1, France), **Anne-Marie Tillier** (CNRS, France), **Marie-France Deguilloux** (Université Bordeaux 1, France), **Stephane Rottier** (Université Bordeaux 1, France)

At the present time, paleogenetic studies on Neolithic human samples are often undertaken in order to enhance the European Neolithization debate. But most of the analyses leave archaeological data apart from their conclusions. This study intends to combine archaeological and genetic approaches, applied to one site in the Paris basin (France): Gurgy 'Les Noisats'. The site consists of a necropolis (4900–4500 BC) which contains 128 individuals, adult and non-adult. Studies of biological features, population structure and funerary practices have been carried out. 101 individuals from the necropolis have also been genetically analyzed using mitochondrial DNA markers (PCR-based and SNP analysis), which provide maternal lineages and characterization of population genetic diversity. In order to get reliable analysis all

authentication criteria were respected for the laboratory process, from the sampling on the field with all precautions to the genetically typing of all the persons who have manipulated. The results of each study have been reported in a Geographic Information System (GIS) to highlight some potential correlation between genetic structuration of the group and archaeological context (spatial organization, chronological data, funerary practices and archaeological material) within the necropolis. Our aim is to gain a better understanding of the population buried at Gurgy 'Les Noisais'.

#### **F04.06: Ancient Human DNA – A problem of interpretation**

by *Keri Brown* (University of Manchester, UK)

The problem with ancient human DNA is not contamination with modern human DNA any more. This still happens, but aDNA scientists can now recognise it and deal with it. The problem is with the overinterpretation of results. Only a few mitochondrial and Y chromosome aDNA sequences may be obtained from a burial assemblage, but these are interpreted in a population genetics framework which incorporates DNA sequences obtained from present day populations. This type of analysis ignores the possibility that social structures can affect genetic outcomes, as is seen in traditional societies and has recently been recognised by evolutionary geneticists. Societies practising patrilocal exogamy versus endogamy have been studied and the mtDNA and Y chromosomal haplotype diversity analysed. Patrilocal societies show high mtDNA diversity while Y haplotype diversity is reduced. Endogamous societies do not show the reduction in Y diversity, but mtDNA diversity is maintained. Ancient DNA results from several Neolithic sites can therefore be interpreted to identify the type of social structure present. Patrilocal exogamy is the most parsimonious interpretation and this is corroborated by Sr isotope studies from LBK sites.

#### **F04.07: Direct calibration of the human mitochondrial molecular clock using ancient human genomes**

by *Alissa Mittnik* (University Tuebingen, Germany)

The rate in which mutations accumulate in the human genome has long been used to date major evolutionary events in our history, like the split of non-Africans from Africans. Recent analyses of *de-novo* DNA mutations in modern families have suggested a nuclear substitution rate that is approximately half that of previous estimates based on anthropological and archaeological evidence, leading to suggestions that major events in human evolution occurred far earlier than previously thought. In a direct approach we used mitochondrial genome sequences (mtDNAs) from 10 radiocarbon dated ancient modern humans from Eurasia that span 40,000 years of prehistory as calibration points to estimate the mitochondrial mutation rate. Using those novel rates we arrive at mitochondrial divergence times that are largely in agreement with previous dates based on archaeological and anthropological work but are at the extreme low end of the dates suggested from *de-novo* studies. In particular, our results imply a separation of non-Africans from the most closely related sub-Saharan African mtDNAs of less than 62,000-95,000 years ago, while *de-novo* studies suggest a split of non-Africans from Africans about thirty thousand years earlier.

#### **F04.08: Food matters – tracing the imprints of the Neolithic transition in the human genome through the study of NAT2 polymorphisms evolution**

by *Eliška Podgorná* (Institute of Archaeology of the Academy of Sciences of the Czech Republic, Prague, Czech Republic), *Viktor Černý* (Institute of Archaeology of the Academy of Sciences of the Czech Republic, Prague, Czech Republic), *Estella Ermione Simonetta Poloni* (University of Geneva / Faculty of Science, Switzerland)

Human evolution is characterized by biological responses to changing environments, but also by a huge variety of cultural adaptations, that have enabled our species to spread and settle all over the world in less than 130,000 years. Many of these cultural innovations are believed to leave a gene-culture coevolution imprint in the genome, due to both demographic and selective processes. Reduced arylamine N-acetyltransferase 2 (NAT2) activity is one of these genetic traits whose evolution has probably been shaped by population-specific selective pressures. Significantly different frequency distributions of acetylation phenotypes are found between agriculturalists and hunter-gatherers in Sub-Saharan Africa, and between sedentary farmers and nomadic pastoralists (both food-producing lifestyles) in Central Asia. Although intensive research has been carried out on various food-producing populations within Eurasia, we lack a similar comparison level in sub-Saharan Africa, due to the under-representation of African nomadic populations in the worldwide database. We have recently started filling this gap by analysing NAT2 sequence variation in 300 individuals from six large and well-defined Sahelian populations (200 Fulani pastoralists and 100 sedentary farmers), in order to address the specific hypothesis of differentiated culturally-driven selective pressures (i.e. associated with lifestyle) having acted on the evolution of NAT2.

## POSTER

### **F04.01-P-4: Anthropogenetic analysis on skeletal remains deposited in storage pits dated to Early Bronze Age from Lochenice (district of Hradec Králové)**

by **Miroslav Pleska** (Museum of Eastern Bohemia in Hradec Králové, Czech Republic), **Marek Pacák** (Museum of Eastern Bohemia in Hradec Králové, Czech Republic), **Pavel Horník** (Museum of Eastern Bohemia in Hradec Králové, Czech Republic), **Kristýna Pířová** (Faculty of Science, Masaryk University, Czech Republic), **Eva Drozdová** (Faculty of Science, Masaryk University, Czech Republic), **Dana Kvítková** (Institute of criminology Prague, Czech Republic)

Since 27. 7. 2012 is running rescue excavation in Lochenice cadaster (district of Hradec Králové). Territory of the village is known as one of the richest archeological sites in eastern Bohemia. Archeological research discovered that area was settled since paleolithic till today. Excavations led by Museum of eastern Bohemia in Hradec Králové unearthed extensive polycultural settlement mainly dated to neolithic and bronze age. Most interesting objects were two storage pits contained human skeletal remains dated to early bronze age (Únětice culture). Remains were mostly in anatomical order on the bottom of the storage pits. Burials in the storage pits are not rare in this period but their interpretation is still problematic. In the cooperation with Laboratory of Human Biology and Anthropology the anthropological analysis was performed. The age, height and sex were determined. The epigenetic markers on skeletons indicate that at least in one case the skeleton's should be related. The bones were in very good condition so it was expected that DNA should be preserved till today. In the cooperation with Department of Forensic Sciences Praha was genetic relationship determined. The results were combined with mitochondrial DNA and Y STR analysis. These methods are tools for geographical and ethical ancestry determination.

## Session F05

### Iron and change in Europe the first 2000 years

Saturday, 7 September 2013, 14:00–18:30

Room: UU 407 (Building 2, 4th floor)

**Organisers:** Peter Halkon (University of Hull, UK), Bernt Rundberget (Kulturhistorisk museum, Norway) and Claudio Giardino (University of Salento, Italy)

The period 1000 BC to 1000 AD is pivotal in the development of Europe, in which the mastery of iron was a crucial but often ignored factor. Iron facilitated production of efficient and powerful weapons and tools enabling the transformation of past societies and environments. Study of iron in its own right has often been overlooked completely by the archaeological “mainstream”. Europe-wide research has enabled archaeometallurgy to advance beyond the Chaîne opératoire of iron production to a state in which its study can make a major contribution to a wider understanding of the human past. It is now possible to identify the origin of ores used for production of an iron object and its place of manufacture. The location of the find can reveal patterns of communication. With this new methodology we can revisit much of the history of this period with a new understanding of the connections that existed between people and places.

Although there have been a range of international conferences on archaeometallurgy including the study of iron, these have tended to consist of disparate, often site-based presentations which seldom venture beyond quantification or analysis of slag or iron objects. A unified approach is essential to enable sharing of innovative scientific methodologies, allowing this subject of research to advance forward, engage with archaeologists and historians studying these periods and get the subject to the forefront of attention that it now deserves.

This multi-disciplinary session aims to bring together all those interested in early iron, its production, use and impact, with a view to establishing its study more firmly. This session will follow the successful workshop held in London in 2010 sponsored by the European Science Foundation which involved participants from 14 European countries [www.esf.org/activities/exploratory-workshops/humanities-sch.html?year=2010&domain=SCH](http://www.esf.org/activities/exploratory-workshops/humanities-sch.html?year=2010&domain=SCH)

Representatives of eight countries have already expressed an interest in participating and we aim to consolidate and extend this network.

#### F05.01: Iron and Change in Europe – the first 2000 years. Introduction and case study

by Peter Halkon (University of Hull, UK)

The period 1000 BC to 1000 AD is pivotal in the development of Europe. A fundamental but often overlooked factor is iron. Iron provided more efficient and powerful weapons and tools, enabling profound landscape transformation, improved agriculture, construction and communication. Imagine the Roman army without the *gladius* or Viking long ships without nails! This session aims to bring together researchers from across Europe to present current research on iron, its manufacture, analysis and socio-economic significance within this time-span.

Yorkshire (UK) provides a microcosm of the impact of iron elsewhere. Small iron objects were amongst the finds on the early Iron Age defended sites at Scarborough and Staple Howe. By the 4<sup>th</sup> century BC, the region contained a major centre for prehistoric iron production and was home to the continentally influenced Arras culture with its chariot burials. Experimentation suggests that the iron in one of these represents over 200 days labour. Roman iron production together with another furnace based product in the region, pottery, may be associated with a regional cult of Vulcan the smith god. In the Viking Age the same region contained a concentration of stone sculptures depicting Sigurd, another mythological character associated with blacksmithing.

#### F05.02: The beginning of iron metallurgy in central Mediterranean area

by Claudio Giardino (University of Salento, Italy)

Apart from minor outcrops, many relevant iron deposits occur in central Mediterranean area: in the central and north-eastern Italian Alpine sector, in Etruria and northern Latium, in Sardinia, in Apulia and in Calabria. Iron industry developed mostly in connection with these mining districts.

It is very hard to sketch a comprehensive review of the early Italian iron industry from the Late Bronze Age to the beginnings of the first millennium BC. The scarcity of archaeometric analyses on Italian iron finds interferes with the study of the development of metallurgy in this country.



Nevertheless, the comparison between old archaeological information and new archaeometallurgical data can help to better understand and bring into focus the relevant matter of the introduction of iron in central Mediterranean area.

#### **F05.03: Production and circulation of iron during the Phoenician period in the Iberian Peninsula**

by **Martina Renzi** (CCHS-CSIC, Spain), **Carme Rovira Hortalà** (Museu d'Arqueologia de Catalunya, Spain), **Dirce Marzoli** (Deutsches Archäologisches Institut, Spain)

The appearance of iron in the Iberian Peninsula is documented by a small set of artefacts pre-dating the 9<sup>th</sup> century BC prior to a stable Phoenician presence. However, the earliest evidence of iron production comes from Phoenician settlements or local sites influenced by the Phoenician presence.

This paper will focus on the iron debris found in the abovementioned sites excavated in the Malaga province and dated between the end of the 9<sup>th</sup> and the first half of the 6<sup>th</sup> centuries BC.

At present, this area provides a great part of analytical data available on protohistoric iron technology in the Iberian Peninsula. This site is also the object of an innovative provenance study of local iron resources by lead isotope analyses and ICP-MS. The unusual presence of high arsenic and nickel levels identified in its ores and in many of the subproducts studied by SEM-EDX suggests a possible exploitation area in the Malaga district. The results obtained so far also point at a potential wider circulation network of those minerals and probably raw metal as well.

#### **F05.04: Iron and Change In Britain – The First 2000 Years**

by **Gerry McDonnell** (Gerry McDonnell Archaeometals, UK)

The period 1000BC-1000AD encompasses dramatic cultural changes in different parts of Britain. Thus, southern Britain was heavily influenced by contact with France and Spain, the north by Scandinavia. It is therefore a difficult task to present a simple coherent single narrative describing the adoption and spread of iron across the UK. However, a broad chronology of iron production and use can be traced with some very significant points of technological change evident in smelting technology and smithing techniques. Throughout the two millennia a wide range of iron alloys are exploited, including ferritic iron, phosphoric iron and steel. Most Iron Age settlement sites produce some evidence of iron smithing, but iron production occurs within settlements and in the hinterland. The earliest evidence of steel production is dated to the about the 5th century BC. During the Roman occupation of southern Britain iron production and use greatly increases. During the first millennium AD in Southern Britain iron production is more localised but the quality of the iron alloys in use, in particular steel achieves exceptional quality. This paper will review the data and identify the critical periods in the evolution of iron technology during the first two millennia

#### **F05.05: Traces of roman metallurgy in the Hageland region of Flemish Belgium**

by **Jan Claesen** (ARCHEBO, Belgium)

The Hageland region of Belgium has rich ore deposits on the hill slopes. This ore seems to be used only for the first time in the Roman period. Large amounts of tap slag have been discovered in the last 5 years and more finds are to be registered. These complexes are situated far from Roman habitation near larger Roman roads. Surprisingly good ore deposits next to Roman settlements such as the vicus of Tienen, were not used. Was the accessibility to large amounts of charcoal more important than the ore?

New evidence could also conclude that iron blooms were transported to specialized *villae* systems, and to the small roman vicus of Tienen. Forging slags were also discovered in great quantity, both in the vicus and the specialized *villae*.

Early metallurgy in this region could be more important than usually assumed and the economic advantage of iron smelting should be examined. Probably specialized Roman workers could earn their living by producing iron in this territory, which was previously believed to be only agricultural.

More data, studies and excavation are needed to understand this industry and its impact.

#### **F05.06: Iron nails in Roman ships**

by Ineke Joosten (Cultural Heritage Agency of the Netherlands, The Netherlands), Kati Mol (University of Amsterdam, The Netherlands), Marco Mauri (University of Bologna, Italy)

In recent decades, a number of vessels from the Roman period have been excavated in the Netherlands. During and after the excavation of the ships, the iron nails were removed from the timber allowing a technical study of nails. Seven different types of nails could be distinguished based on the dimensions and weight of the nails. The material properties of the nails and the provenance of the iron were studied by metallographic examination, Vickers hardness measurements, SEM-EDS and LA-ICP-MS. Varying carbon and phosphorus contents cause differences in hardness. The heterogeneous composition of the material, in combination with the many welds indicates a poorly mixed base material. This is comparable to Roman nails from Inchtuthil and Bradings. It appears this was the Roman standard of the raw material for nails. Two of the ships were built of the wood that was felled in the year 163 AD, as was shown by dendrochronological dating. The characteristics of the nails of these ships were compared to study whether the two vessels were built (possibly together) at the same shipyard. The chemistry of the slag inclusions in the nails does not show a correlation between these two ships.

#### **F05.07: The chemical composition of iron alloys in the north of the Swiss Alps from Iron Age till Medieval Times**

by Marianne Senn (Empa, Switzerland)

This paper presents a method of "fingerprinting" iron alloys in the north of the Swiss Alps, from the middle Iron Age till the Medieval period based on LA-ICP-MS analysis of the metal. For this purpose metal waste material on smelting sites and in smithies were analysed, but also a larger number of artefacts as tools, weapons and personal equipment. Some of these iron families have a known origin. The best known dates to Early Medieval period and describes the main metal in use during this period in the smelting district in the canton Jura in Switzerland. Other groups have an unknown origin, but are well defined as being used in certain settlements such as the oppidum of Rheinau in the canton of Zurich. The analysis of the metal composition is mostly combined with the analysis of slag inclusions in the metal. That helps to provide an understanding of the ore family from which the metal originated. This method can define manufacturing regions, but is not powerful enough for defining its precise origin.

#### **F05.08: Scales and slag inclusions- on processes and provenance**

by Arne Jouttijärvi (Heimdal-archaeometry, Denmark)

Physical characteristics and chemical composition of hammerscale, found in archaeological excavations, can be used as an indicator of the processes performed in prehistoric workshops.

The physical distribution of smithing residue, as determined by systematic sampling of soil from workshop floors or postholes, can be an aid in the interpretation of the layout of a workshop.

Analyses of more than 3.000 hammerscale from a number of smithies in Scandinavia has led to the assumption that different types of workshops can be identified on the basis of differences in the type and number of processes, which have been carried out.

The compositional types of hammerscale identified, corresponds to types of slag inclusions within iron objects. Inclusions can be remnants of smelting slag; slag formed during welding or fragments of iron oxide (hammerscale).

The composition of inclusions of smelting slag can be used as basis for an assessment of the provenance of the iron used in an object. Analytical data on slag from smelting sites within Northern Europe has been collected, and the different compositional groups can be mapped. The development of iron production and import in Denmark can be outlined on the basis of slag inclusion analyses of more than 300 objects.

#### **F05.09: Provenancing iron – possibilities and problems? Some Scandinavian examples**

by Lena Grandin (Swedish National Heritage Board, Sweden)

One major issue in defining prehistoric trade routes and networks is determining whether manufactured iron items can be related to specific iron production regions. Current results from chemical analyses comprising major, minor and trace elements, have demonstrated that various iron production regions can potentially be distinguished by bloomery slag compositions. This is feasible due to the variations in bedrock geology that produces various geochemical signatures. Those are inherited in the limonitic ores that primarily were used in the bloomery iron production such as in

Scandinavia. However, depending on the characteristics of the regional geology, elemental signatures may vary over short distances or be more homogeneous within larger areas. This may accordingly influence the resolution of traceability of the source as can be demonstrated by examples from Scandinavian sites with better potential for discrimination in some regions than in others. Furthermore, it is essential to distinguish the ore signature from the effect of process signatures and define the elemental behaviour. Obviously, the archaeological hypothesis is also fundamental; considering options as a local market vs. long distance trade and whether it is sufficient to discriminate several sources for the supply of metal or if those also should be identified

#### **F05.10: Determining the origins of iron in prehistoric and medieval Norway – a chemical approach**

by Jan Bill (University of Oslo, Norway), Bernt Rundberget (University of Oslo, Norway), Jan Henning Larsen (University of Oslo, Norway)

Being a critical resource throughout the Iron Age and Medieval period, acquiring iron was likely to have been of high economic and political importance. The flow of iron in past societies has traditionally been investigated through the distribution of certain types of iron objects, based on the assumption of correspondence between artefact typologies and provenance chronologies. Several archaeometric research groups are today working on establishing methods for direct provenance determination of iron, thereby avoiding the problematic assumptions of the typo-chronological method.

This paper presents an ongoing project aimed at developing methods and baseline data for the provenancing of iron made from bog ore. Through bulk chemical analyses of production slags from secured archaeological contexts, chemical 'signatures' from production sites are obtained. These are based on the content of more than 40 main and trace elements. Through multivariate analyses the signatures are used to identify and define regions with shared slag chemistry. By means of electron microprobe techniques, inclusions of supposed production slags in iron objects are being analysed and their chemical composition compared to those known from the iron production regions.

#### **POSTERS**

##### **F05.01-P-2: Technology of production of iron tools of archeological complex Zapol'e**

by Maksim Chirkov (Institute of Archaeology, Russian Academy of Sciences, Russian Federation)

The archeological complex Zapol'e is situated in the Beresniakov region of Perm territory, Russian Federation. This complex includes the settlement Zapol'e, the settlement at Chashkino and burial ground at Zapol'e. Archeological material can be dated from the seventh to the thirteenth centuries A.D and related to the period of the Lomovotovskaja and Rodanovskaja cultures. Complex mass metallographic analysis was undertaken for the first time. Analysis of 42 iron items was undertaken, including knives, axes, arrow-heads, bridles, stirrups, and iron half-finished products. As a result we made some conclusions about technological peculiarities of the production of those items. There is a connection between the metallurgical complex of settlement Chashino II and iron items from the settlement at Zapol'e I. We also made an attempt to define changes in technological traditions of Finno-Ugric smiths of High Prikamie in I-II millennium A.D.

##### **F05.02-P-2: Life and work at a medieval blast furnace site**

by Gert Magnusson (Swedish National Heritage Board, Sweden)

The introduction of industrialized mining has had a crucial bearing on our understanding of medieval Scandinavian history. A landscape with 700 medieval blast furnace sites and some 10 000 mines, these ancient monuments provide possibilities of understanding the earliest industrialization. One site has been excavated and contributes to a better understanding of the daily work of the blast furnace site of Lapphyttan, 170 km NW of Stockholm.

The investigations show that a sophisticated industrial facility existed at Lapphyttan in the mid-13<sup>th</sup> century. There were a blast furnace, eight fineries, a roasting pit, a dwelling house and an iron store. Various types of ore were used. Products such as lump iron, osmund iron and iron bars, have been found. More than 9 400 artifacts demonstrating different stages of the work and the knowledge of the ironworkers have been recorded. The excavations reveal a complex industrial establishment with a water powered blast furnace. However, the fineries were still driven by muscle power and a bottleneck in the production.

My poster shows how archaeological artifacts and constructions can be used to reconstruct life, tacit knowledge and work at a medieval iron production site.

## Session F06

### Sediment stratigraphy as the record of human impact

Saturday, 7 September 2013, 14:00–18:30

Room: UU 307 (Building 2, 3rd floor)

**Organisers:** **Piotr Szwarczewski** (University of Warsaw, Poland), **Ewa Smolska** (University of Warsaw, Poland), **Peter Barta** (Comenius University, Slovakia) and **Mariusz Błorński** (Polish Academy of Sciences, Poland)

The main aim of this session is to provide an interdisciplinary forum for the presentation of results of the studies carried on the correlation between facial diversity of the deposits (of various origin) and economic human activity. These studies could have been carried in various regions with various archaeological and historical past.

Stratigraphical analysis of archaeological excavation, geological exposures or material from drilling can reconstruct the natural and anthropogenic changes that have taken place in the natural environment in the study area in the past – thus provide information about both the environmental conditions of the settlement and environmental consequences of human presence. The development of a detailed analytic methods (extremely quick from 80s and 90s especially in increasing number of publications) allows for distinguishing the macroscopically homogenous levels into smaller sediment units. It is possible due to the application of research methods used in the sedimentology, geochemistry, geophysics, paleobotany, et al. Very often, these interdisciplinary research techniques allow to discover new, unknown periods of economic activity that are not recorded in artifacts and/or divide them into phases. They are also an additional source of material about the environmental and human past of the area.

Interdisciplinary research conducted at archaeological sites and their vicinity show that the archaeological finds are not the only economic record of human activity in prehistoric and historic times. The former processes of land use change, development of agriculture or metallurgy are recorded in facial differentiation of sediments accumulated in subsidiary landscapes, such as valley bottoms, the base of slopes or lake basins.

To participate in this session, we invite representatives of various fields of knowledge that are involved in the reconstruction (or analysis) of the human economic activity from the stratigraphical diversification of sediments.

#### **F06.01: Sedimentological and geochemical proxies of human impact (examples from Masovian Lowland, Central Poland)**

by ***Ewa Smolska*** (University of Warsaw, Poland), ***Piotr Szwarczewski*** (University of Warsaw, Poland)

Until the appearance of first settlers dealing with agriculture the geomorphic processes in the area of Central Poland were controlled (conditioned) by the climate. No significant changes occurred on the slopes and river valleys covered by the extensive and dense forests. Human economic activity (e.g. deforestation, agriculture, ancient metallurgy) initiated the development of erosion on the slopes and the transformation of the landscape.

Fluctuations in the functioning of systems due to the climate change and human activities are reflected among other things in the lithological characteristics such as sediment grain size and the organic matter content. Changes in the sedimentological features in all types of environments was the first indicator of initiation of change. Regarding the absolute age of sediments and the sedimentological features of deposits it can be concluded that the first response to human activity in the environment was recorded in the overbank sediments in the bottom of the Skrwa river valley. Subsequently, there have been accumulated alluvial fans at the mouths of erosional forms. The changes in chemical features of sediments are generally overlapped on the sedimentological record of human activity; if it comes to trace elements the response is slightly offset.

#### **F06.02: The provenance of lead in sediment cores from Portus, the harbor of ancient Rome**

by ***Hugo Delile*** (Université Lumière Lyon 2, France), ***Janne Blichert-Toft*** (Ecole Normale Supérieure de Lyon, Université Claude Bernard-Lyon I and CNRS, France), ***Francis Albarède*** (Ecole Normale Supérieure de Lyon, Université Claude Bernard-Lyon I and CNRS, France), ***Jean-Philippe Goiran*** (Maison de l'Orient et de la Méditerranée, France)

This study focuses on the analysis of lead provenance in *Portus*, the harbor of ancient Rome. Because Rome wastewaters were discharged into the Tiber and flowed down to *Portus* through a network of canals connecting the river to the sea, harbor sediments hold the heavy metal record of local economic activity and reflect the distant echo of the upstream urban development of Rome. The present work presents Pb isotope compositions and concentrations in two <sup>14</sup>C dated sediment cores from the *Portus* harbor and provide a record of pollution from 2000 to 1000 years ago. A strong Pb/Al peak is observed during the Early Roman Empire. From the Late Roman Empire to the Middle Ages,

anthropic Pb decreased but still prevailed over the natural background. The three independent parameters T- $\mu$ - $\kappa$  derived from the measured Pb isotope compositions (Albarede et al., 2012) reflect distinct sources of Pb ore supply from either Hercynian (Spain, Sardinia) and/or Alpine (likely East Mediterranean) ore district exploitations. The provenance of roman metal pollution seems to be controlled by the interplay of territorial conquests and defeats with strong discontinuities in the record at the time of the Gothic wars and the Arab sack of Rome.

#### **F06.03: Sediment stratigraphy in Lachay-Iguanil region as the record of human impact and environmental changes**

by **Piotr Kalicki** (Institute of Archaeology, Jagiellonian University, Poland), **Tomasz Kalicki** (Institute of Geography, The Jan Kochanowski University in Kielce, Poland), **Piotr Kittel** (Faculty of Geographical Sciences, University of Lodz, Poland)

Lomas de Lachay and Lomas the Iguanil are situated about 80 km north of Lima and are one of the largest fog oases of the Central Coast of Peru. Despite hyper-dry, tropic climate of the western coast of South America moisture is brought by thick fogs (*garua*) associated with temperature inversion caused by cold Humboldt Current. Its condensation on first, low hills of the Andes leads to formation of unique ecosystem of fog oases (*lomas*). Its lush vegetation and abundance of various species of animals attracted human groups from the Early Holocene.

Previous archaeological surveys suggest presence of at least three settlement horizons: hunters-gatherers of the Preceramic Period, Late Formative groups and late pre-Hispanic societies. Fieldwork in Lachay-Iguanil region focused on two last phases of *lomas* settlement, when a complex system of agricultural infrastructure was developed. Comparison of sediment record and remains of agricultural infrastructure allow to confront archaeological interpretations with independent environmental data. Taking into consideration natural factors (climate oscillations, ENSO) sediment stratigraphy analysis made possible evaluation of human impact on the environment. Research was carried on in project financed by National Science Centre (Poland) by decision no. DEC-2011/03/N/HS3/01151.

#### **F06.04: Analysis of loess-derived archaeological sediments and loess-paleosol sequences in Central Europe using VIS-spectroscopy**

by **Eileen Eckmeier** (University of Bonn, Germany), **Jens Protze** (RWTH Aachen University, Germany), **Holger Kels** (RWTH Aachen University, Germany), **Renate Gerlach** (LVR, Germany)

Colors of soils or sediments reflect their characteristics and are related to soil forming processes. Correlations between soil colors and soil components can be measured using spectrophotometrical data. We compared color spectra, or the reflectance spectra of visible light (VIS-spectroscopy) of archaeological soils and sediments with analytical data from XRF elemental analysis, carbonate and organic carbon concentrations. Predictive models were built based on partial least squares regression (PLSR).

Soil samples were taken from archaeological excavations in the loess-areas of NW-Germany, where Luvisols are dominating, and from the Central German area where chernozem-like soils are present. We sampled features like pit-fillings from Early Neolithic to Roman or Iron Age, and investigated loess units, paleosols and recent topsoils in the Carpathian basin (Romania, Serbia, Hungary).

First results showed that the discrimination of horizons and sediment units can be supported by color values, and that soil forming processes like clay illuviation are visible in the data. Soil colors are significantly different between archaeological periods and between the two investigated regions. The presence of charcoal and carbonates highly correlated with the lightness of soils, while in samples with lower concentrations of organic matter, the presence of iron oxides mediated soil color.

#### **F06.05: Record of human impact in catena terrace-flood plain at Zofipole (Vistula valley downstream of Cracow, southern Poland)**

by **Halina Dobrzanska** (Polish Academy of Sciences, Poland), **Tomasz Kalicki** (Jan Kochanowski University, Poland)

The authors present results of an interdisciplinary project on man-environment interrelationships in the Vistula river valley between the 1<sup>st</sup> and 4<sup>th</sup> centuries AD. The studies included geophysical, geomorphological and archaeological examinations as well as paleobotanical and mineralogical analysis.

Radiocarbon dating and dendrochronological data were also used.

Roman period settlement zone to the east from Cracow extends for 30 km along the Vistula river valley. Settlements were closely related to morphological-hydrological situation. Sites were being located close to the terrace edge, between ecosystems of the loess terrace and the flood plain, with optimal conditions for multidirectional economic

activities, both agricultural and non-agricultural (pottery production, bronze founding, jewelry and iron metallurgy).

Record of human impact in catena terrace-flood plain will be discuss at an example of the most important site of the area at Zofipole in context of the Vistula valley settlement zone. The changes are observed on loess terraces as well as on flood plain, were process of river aggradation is testified by layer with Late Roman period artifacts covered with clayey overbank sediments and by filling with silts (originated from loess terraces) side channels of Vistula tributaries.

**F06.06: Kalisz-Zawodzie. Stronghold on the island on Proсна river. Consequences and benefits, recorded in the archaeological data.**

by Tadeusz Baranowski (Institute of Archaeology and Ethnology PAN, Poland), Gilberto Calderoni (Università degli Studi di Roma, Italy)

The stronghold of Kalisz-Zawodzie was a mediaeval centre of secular and ecclesiastical power. Situated on an island in the middle stream of the Proсна River it definitely played an important role in changes observed in settlement pattern between 9<sup>th</sup> and 13<sup>th</sup> centuries.

According to paleo-environmental research the flow of main rivers of the region in the mediaeval period differed from their present layout. Proсна and its tributary Swedrnia were navigable to some extent causing geographical situation of Kalisz very favourable.

Elements of the local settlement were subject to excavations for several decades, therefore this archaeological site is one of the places in Poland which provide best opportunities for research on the stratification formation processes allowing an interpretation of the settlement transformations in a long-term perspective.

An interesting case study is an issue of land stability in Kalisz stronghold which is reflected in piling used underneath the 12<sup>th</sup> century church of St. Paul. No similar protection of escarpment from the same age have been found in other areas of Poland. A complex study on stratigraphy and connection of Harris matrix with radiocarbon dating enabled a possibility of resolving multiple questions concerning history of this site.

**F06.07: River valley sediments – the archive of past human activity (a case study from Nasielsk, Masovian Lowland, Central Poland)**

by Mariusz Błoński (Polish Academy of Sciences, Institute of Archaeology and Ethnology, Poland), Piotr Szwarczewski (University of Warsaw, Faculty of Geography and Regional Studies, Poland)

The sediments filling the Nasielska River Valley were accumulated in the conditions of increased anthropogenic impact related to the development of settlement and economy in the area. Basing on archaeological data there have been distinguished several phases of human economic activity. These periods are reflected in the sedimentological and geochemical characteristics of accumulated sediments. There have been distinguished such periods as: beginning of the development of agriculture, the early medieval period of the milling development, the period of the industrial revolution of the nineteenth century and the forced industrialization that took place after World War II.

**F06.08: Enigmatic pottery deposits in aluvial sediments in Nowy Drzewicz (Poland). An attempt to interpretation of site in context of archaeological and geological data.**

by Robert Zukowski (Institute of Archaeology and Ethnology PAN, Poland), Paweł Gan (Institute of Archaeology and Ethnology PAN, Poland)

Archaeological site of Nowy Drzewicz lies in the central Poland. The multi-cultured site is located at the foot of the flat, strongly denudated hill in the interglacial era moraine plain. The interesting problems appeared in the western part of the excavated site. After the humus was removed, a layer of sand was recorded. It's composition and features were similar to the natural soil. Under the layer a large slit sediment was recorded, suggesting the existence of natural seasonal reservoir in the terrain slight depression. The slit sediment was relatively thin – c.a. 20 cm deep and no relics of human activity have been found inside. Underneath was the sandy deposit composed of loose, coarse sand in which small stones of 15–30 cm diam., occurred – single or in small groups. Since this deposit definitely differed from the natural soil documented on the whole researched area – eolic, packed, fine-grained sand, further exploration was conducted bringing to light new data. The excavated deposit was about 1 m. deep and contained almost 50 archaeological objects, with pottery sherds, animal bones and others. In present lecture the phenomenon of “fluvial” sediments in the process of formation of the archaeological sites will be discussed.

## POSTERS

### F06.01-P-2: Reading of alluvial stratigraphic record – using GIS and heavy metal contamination

by **Jan Horák** (CU: Charles University in Prague, Faculty of Arts; CULS: Czech University of Life Sciences, Faculty of Environmental Sciences, Czech Republic)

Medieval mining in Kutná Hora region (Czech Republic) and its impact on fluvial sediments was explored. The mining reached its top in 13<sup>th</sup> and 14<sup>th</sup> century until the first half of 16<sup>th</sup> century. Then it was practically finished.

The research – metaanalysis of all existing data – focused on analysing spatial patterns of contamination. The elements are divided into two main groups generally interpretable as contamination group and background group. But this division (made mostly on topsoil samples) does not respect some observations made in special way (vertical sampling through fluvial sediments).

Another analysis was focused on As concentration in two depths. The aim was to discover, if the contamination is distributed the same way. The analysis (kriging, reclassification, raster diversity computation) showed that contamination in deeper sediments seems to be more spatially diversified then the diversity in topsoil sediments.

Second GIS analysis was focused on possibility of differentiation of contamination factors. This method could be used as a proxy of sediment provenance research. The analysis (factor analysis, interpolation of factor scores by kriging) distinguished factors of clearly different patterns of spatial distribution.

The use of contamination as a proxy information is very useful.

### F06.02-P-2: Nowe Warpno – new perspectives in the study of archaeological coasts and underwater research

by **Przemysław Krajewski** (University of Szczecin, Poland), **Marta Chmiel** (University of Szczecin, Poland), **Michał Adamczyk** (University of Szczecin, Poland)

The paper will be focused on new perspectives in the study of coastal and submerged landscapes. Coastal processes are important for preservation status of the sites and archaeological contexts, but above all they huge role in the archaeological interpretation process.

The most important part of the paper is an attempt to assess the scale of erosion and the consequences arising for the preservation of archaeological sites. In a research of changes in a range of shoreline were used modern measures, paleoenvironmental research and cartographic sources. Results of analyzes of the 17th Century maps makes possible attempt to assess the scale of the phenomenon. The research develops a new perspective on the past results of excavations carried out in the coastal landscapes.

### F06.03-P-2: Interdisciplinary studies of the “Chashkinskoe Lake” archaeological microregion (Upper Kama basin)

by **Evgeniia Lychagina** (Perm State Humanitarian Pedagogical University, Russian Federation), **Nataliya Zaretskaya** (Geological institute of RAS, Russian Federation)

Modern archaeological studies cannot be based only on typological analysis of the artifacts now. We need to reconstruct palaeoenvironment (landscape, climate, flora and fauna) in which humane societies lived. The following methods can be used for these aims: radiocarbon dating, paleogeomorphology, paleochannel and spore-pollen analysis etc.

Chashkinskoye Lake is a system of the Kama former oxbow lakes that is now connected with main riverbed by arm-channels because of Kamskoye reservoir overflowing. More than 10 archaeological sites belonging to Late Mesolithic – Chalcolithic are located close one to another on the area of 7 km along the bank on the eastern side of the Lake. Such density shows that this region was favorable for habitation in the first half of the Holocene.

According to the existing radiocarbon dates, we can bracket this period between 7300-3500 <sup>14</sup>C years BP. Preliminary spore-pollen data embraces middle Neolithic period, i.e. the Holocene climatic optimum with broad-leaf forests and the following cooler period with broad-dark coniferous, and then the mixed conifer, pine and forests, mainly.

Primary palaeochannel scheme of the Chashkinskoye Lake area revealed the coincidence of archaeological sites' location with certain stages of the Kama river development.

#### **F06.04-P-2: Reconstruction of past landscape with the use of GIS-analyses on example of Poganowo site**

by **Mariusz Wyczółkowski** (Wojciech Ketrzyński Museum, Poland), **Piotr Szwarczewski** (University of Warsaw, Poland), **Ewa Smolska** (University of Warsaw, Poland)

Archaeological site of Poganowo is located in Masurian Lake District, NE Poland. According to archaeological data it was settled from 300-100 BC to Middle Ages. At present the site is the hill surrounded by swamps. The aim of the study was the recognition of sediments filling the depressions and colluvial sediments accumulated at the foot of hill. For chosen depressions, the lithology, organic matter content, heavy metals concentrations and palynological analysis were performed. Sediment sequences were distinguished and then correlated with the phases of the settlements. Recognized sequences of sediments, represented by silt, gytja, mud, peat, peat with admixture of sands indicate stages of disappearance of water in the basins and development of bogs. Basing on GIS analysis and using numerical terrain model, past landscape was reconstructed, as well the changes in Poganowo hill morphology caused by past human activity.



## Session F07

### Testing Time: new approaches to archaeological chronologies, radiocarbon dating, and 14C data

Friday, 6 September 2013, 14:00–18:30

Room: EP 208 (Building 1, 1st floor)

**Organisers:** Nicki J. Whitehouse (Queen's University Belfast, UK), Ben Gearey (University College Cork, Ireland) and Martin Hinz (Christian-Albrechts-University Kiel, Germany)

In recent years, major advances have been made in our approaches to using not only radiocarbon data to construct general archaeological chronologies, but also in understanding their specific qualities, strengths and limitations. We have seen improved dating of early archaeological sites due to refinements in methods, whilst advances in understanding the effects of 'old wood' on cremated bone and charcoal and compound-specific dating have highlighted important issues in sample selection. The consideration and screening of suitable material in the construction of archaeological chronologies has achieved renewed rigour through the use of Bayesian approaches. These approaches to archaeological sites and palaeoenvironmental sequences allow more precise site chronologies to be constructed and have facilitated major advances in our understanding of chronological relationships both at a site-specific scale and broadly at the regional and period level. Improving our knowledge of the temporal relationships between archaeological activity and ecological change has been particularly important in situations such as the introduction of agriculture and human-environmental relationships, although thus far such combined Bayesian approaches have been few and far between. What are the lessons to be learned in creating and using site specific and spatially diverse chronologies?

Archaeologists have also been exploring the use of 14C dates as data, (e.g. to infer population histories or intensity of human activity), and examining the relationship between temporal trends and wider archaeological and/or environmental/climatic patterns. Such approaches are providing important new insights but are not without their issues. How valid are such approaches and what interpretative and taphonomic limitations may require consideration?

In this session, we invite contributions which explore these areas; although we are particularly interested in advances in radiocarbon data and associated approaches, we also invite abstracts that address advances in other chronological tools (e.g. dendrochronology), especially where these link with the themes addressed above.

#### F07.01: The times of their lives: precise chronologies for the European Neolithic?

by *Alasdair Whittle* (Cardiff University, UK)

*The times of their lives* is a five-year ERC-funded project exploring how to refine chronologies for the European Neolithic ([www.totl.eu](http://www.totl.eu)). It is unlikely that the chronological framework for the European Neolithic is importantly wrong, and chronological schemes can sometimes offer considerable precision. But routinely we make use of blocks of time of 200 years or more, including on the basis of visual inspection of radiocarbon dates. The pitfalls of such 'eyeballing' are emphasised. Building on studies of long barrows and causewayed enclosures in southern Britain (Bayliss and Whittle 2007; Whittle *et al.* 2011), *The times of their lives* is examining a series of case studies from the sixth–third millennia cal BC across Europe, principally through the interpretation of radiocarbon dates in a Bayesian framework. Recurrent themes are the importance of chronology for the understanding of cultural sequences, settlement aggregation, monumentality and social change. At stake are our ability to grasp both the timing and tempo of Neolithic developments, and the opportunity to take Neolithic studies to the level of lifetimes and generations. Examples discussed in this paper include the tell of Vinča-Belo Brdo, the Lengyel settlement and burials at Alsónyék in Hungary, and the sixth–fifth millennium cultural sequence in Alsace.

#### F07.02: Boom and Bust in Europe's Early Farming Populations

by *Kevan Edborough* (University College London, UK), *Stephen Shennan* (University College London, UK), *Adrian Timpson* (University College London, UK), *Mark Thomas* (University College London, UK), *Sean Downey* (University College London, UK), *Katie Manning* (University College London, UK), *Sue Colledge* (University College London, UK), *Tim Kerig* (University College London, UK)

We present summed calibrated radiocarbon date distributions from a number of regions across the western half of Europe as a demographic proxy (6,000–2,000 Cal BC). We develop a new set of statistical tools that allow for the identification of significant features in summed calibrated date distributions, as well as correlations with other temporal processes, whilst dealing with concerns regarding sample sizes and sampling error, taphonomic losses, long term population trends, multiple samples from sites, and potentially unjustified features in the calibration curve. Our results

indicate that West European populations grew rapidly in many regions with the onset of farming, but that these growth rates were not sustained. The new subsistence system, despite its potential for supporting increased populations in any suitable area, did not bring long-term stability. The characteristic regional pattern indicated by changing population densities is one of instability; of boom and bust. We demonstrate the existence and quantify the scale of these instabilities and discuss the possibility that they have endogenous or exogenous causes.

#### **F07.03: From demography to dates and back again: is it possible to uncover meaningful population trends in aggregated scientific dating results?**

by **John Meadows** (*Zentrum für Baltische und Skandinavische Archäologie, Stiftung Schleswig-Holsteinische Landesmuseen, Germany*), **Daniel Contreras** (*Christian-Albrechts-Universität zu Kiel, Germany*)

The last decade has seen a stream of publications based on the premise that cumulative probability distributions of calibrated radiocarbon dates are valid proxies for human populations. Some authors have discussed challenges facing this approach, including differential survival of potential samples, uneven spatial and temporal coverage due to historical/economic circumstances and academic priorities, and the predictable but still complicating impact of wiggles in the radiocarbon calibration curve.

Even if these issues were resolved, however, we suspect that the “summing” approach would obscure, not reveal, rapid population changes, and could suggest misleading links between population and precisely dated events. We demonstrate this using simulation models of historically attested population changes with significant social repercussions. We show that even under ideal conditions, it is difficult to distinguish between real and spurious patterns, or to accurately date sharp fluctuations.

We also consider whether the assumption behind “summing”, that dated samples are randomly selected from an underlying population of potential samples, is realistic, and whether other statistical interpretations of radiocarbon results are equally reliant on its validity. If so, assumptions about the temporal distribution of potential samples may affect radiocarbon chronologies, and hence perceived population trends. We illustrate this with case studies from cemeteries.

#### **F07.04: History or just wiggles? The dynamics of settlement intensity in the fourth millennium BC in northern Central Europe**

by **Martin Hinz** (*Christian-Albrechts-University, Germany*), **Johannes Müller** (*Christian-Albrechts-University, Germany*)

The recent results of the Priority Program 1400, “Early Monumentality and Social Differentiation”, show that the time of the Funnel Beaker societies in North Central Europe is characterised by very different stages of the development of population, economy and pottery style. An argument for this is the sum calibration of 14C data used as indicator for the intensity of settlement and ritual activity. From this we infer that around 3700 an intensification of settlement activities is deducible. After 3500, the latest after 3400, a sharp decline seems to take place. Is the phase of the building of megalithic tombs marked by a decline in population? Do the fluctuations in the sum calibration actually reflect historical changes, or are they merely the result of different deposition behavior or the shape of the calibration curve? And if here actually changes in settlement intensity can be traced, how can this be correlated with changes in agriculture and the stylistic development of the ceramic and its regionalization during the Funnel Beaker time? Based on the data of the Priority Program, we will try to justify our results and to link the different indicators to a coherent historical picture.

#### **F07.05: Bayesian modelling, summed probability, and the timing of the earliest Neolithic in Iberia**

by **Pedro Díaz-del-Río** (*Consejo Superior de Investigaciones Científicas, Spain*), **Joan Bernabeu** (*Universidad de Valencia, Spain*)

Since the publication of Zilhão’s influential paper “Radiocarbon evidence for maritime pioneer colonization at the origins of farming in west Mediterranean Europe” in 2001, the list of suitable Iberian Early Neolithic radiocarbon dates has increased substantially. In this contribution we use Bayesian modeling to reassess the timing and spread of Neolithic traits throughout Iberia, testing the likelihood of maritime ‘leapfrogging’ and ‘oil spill’ patterns as plausible hypothesis. In order to do so, we first review the quantity and contextual quality of the available radiocarbon dates. The main problem behind any model seems to be its reliance on a still limited sample size, where a new set of randomly distributed dates may significantly transform the likelihood of any model. Scholar’s interest in participating in the debate, Bloch’s “obsession with origins”, may also contribute to cliffs in the summed probability distribution of all Neolithic dates.

**F07.06: Human settlement & eco-dynamics inferred from radiocarbon chronologies, archaeological and palaeoenvironmental data from Neolithic Ireland**

by **Rowan McLaughlin** (Queens University Belfast, UK), **Philip Barratt** (Queens University Belfast, UK), **Meriel McClatchie** (Queens University Belfast, UK), **Rick Schulting** (University of Oxford, UK), **Nicki Whitehouse** (Queens University Belfast, UK)

An exceptional number of development-led archaeological excavations occurred in Ireland in recent decades, before the economic crisis of 2008 and ensuing economic realities that have decreased the amount of development works being carried out. However, the quantity of raw archaeological and palaeoecological data now available for the island is unprecedented, and a number of efforts to synthesize these data have been instigated. This contribution reports on one such project funded by the Heritage Council, Republic of Ireland, 'Cultivating Societies; assessing the evidence for agriculture in Neolithic Ireland', from which new insights into Neolithic and Early Bronze Age settlement histories that have emerged. Some 2000 radiocarbon dates are available from 400 sites for the period of interest, and these have been analyzed using custom software and visualization techniques. What emerges is a picture of strongly fluctuating levels of prehistoric activity, some of which seems remarkably in-phase with palaeoenvironmental evidence for landscape change. By centering chronology in the discussion to a degree that has hitherto been impossible, some aspects of prehistoric population dynamics can be resolved with historical precision. Other timeframes and geographic regions remain frustratingly obscured by missing or problematic data, and hence priorities for future work can be identified.

**F07.07: "...Not quite respectable thoughts ...": from the regional back to the local, ways of thinking about 'events' and 'processes' in the palaeoenvironmental record**

by **Ben Gearey** (University College Cork, Ireland), **Seren Griffiths** (Cardiff University, UK)

Recent palaeoenvironmental studies have stressed relationships between large (regional) scale models and mechanisms of environmental change and cultural transitions — for example the early-mid Holocene sea level rise (Turney and Brown 2005), climatic changes around the Mesolithic-Neolithic transition (eg Bonsall *et al.* 2002; Schulting 2010), and mid Holocene climate change and patterns of site construction across Irish peatlands (eg Plunkett *et al.* 2013). Such 'meta-analyses' often approach palaeoclimate reconstruction using geographically and chronologically wide-ranging datasets, and attempt to ascribe 'causal' relationships between environmental evidence and cultural change. Inherent in moving from site-specific data and models to geographically and temporally wider-scales are 'scaling up' processes. In this paper we highlight some conceptual and methodological concerns associated with aspects of these processes. We use palaeohydrological peatland records to explore the reification of the concept of 'palaeoclimate'; the correlation and conflation of poorly defined chronologically data; and subsequent implications for models of anthropogenic activity. We argue that 'top down' approaches can lead to misleading interpretations, and emphasise that site-specific palaeoenvironmental proxies *and* their chronologies must be paramount in palaeoclimate reconstruction. We use data to stress that multi-proxy, multi-sequence evidence from individual sites produce the most sophisticated and informative investigations of cultural and environmental change.

**F07.08: Chronology of peatland hydrological dynamics and the Mesolithic-Neolithic transition in the southern North Sea basin: a Bayesian approach**

by **Jeroen Verhegge** (Ghent University, Belgium), **Erick Robinson** (Ghent University, Belgium), **Mark Van Strydonck** (Royal Institute for Cultural Heritage, Belgium), **Philippe Crombé** (Ghent University, Belgium)

The Mesolithic-Neolithic transition in the wetland margins of the southern North Sea basin occurred well over a millennium after the transition in neighbouring loess regions. In this presentation we investigate the possible role played by peatland hydrological dynamics in the unique processes and tempo of the agricultural transition in these wetland regions. We take a Bayesian approach to the integration of <sup>14</sup>C datasets from accurately datable archaeological remains and key horizons in peat sequences in the Antwerp harbour area of Belgium in order to test whether the Mesolithic-Neolithic transition was contemporaneous, and therefore possibly correlated, with hiatuses in peat growth caused by increased peri-marine influences. Bayesian modelling suggests that the Mesolithic-Neolithic transition in this wetland margin of the southern North Sea basin was carried out in a brackish tidal mudflat landscape rather than a freshwater marshy landscape.

#### **F07.09: Paleodemography of the Danube Gorges Mesolithic-Neolithic: comparing skeletal evidence and summed radiocarbon probability distributions**

by ***Camille de Becdelievre*** (Faculty of Philosophie, University of Belgrade, Serbia), ***Jelena Jovanovic*** (Faculty of Philosophie, University of Belgrade, Serbia), ***Marko Porcic*** (Faculty of Philosophie, University of Belgrade, Serbia), ***Sofija Stefanovic*** (Faculty of Philosophie, University of Belgrade, Serbia)

The Neolithic transition, the passage from mobile foraging to sedentary farming, was a major shift during human prehistory and remains a pressing scientific question. It is hypothesized that this “new way of life” correlates with one of the first important events of demographic expansion. The development of methods allowing for paleodemographic comparison, especially using summed probability distributions of C-14 dates, provides the opportunity to test assumptions about fertility changes between the Late Mesolithic and Early Neolithic. Summed probability distributions of 250 radiocarbon dates are used as a demographic proxy for population fluctuations from the Early Mesolithic to the Neolithic in the Danube Gorges (from 9500–5500 BC). We also use two paleodemographic indicators of growth rate and fertility calculated from Danube Gorges skeletal sample (Hajdučka Vodenica, Vlasac, Lepenski Vir, Padina, Ajmana) as independent proxies for inferring changes in population size through time. We then compare the results from two different paleodemographic methods in order to get a more complex picture of population dynamics. Our preliminary results suggest a gradual population growth during the Mesolithic period, followed by an abrupt demographic increase during the Transitional period.

#### **F07.10: Meal time? The untapped 14C potential of pottery lipids**

by ***Jessica Smyth*** (University of Bristol, UK), ***Richard Evershed*** (University of Bristol, UK)

Efforts to establish precise radiocarbon chronologies for periods of past human activity are often hampered by difficulties in obtaining suitable dating material.

Pottery sherds are among the most routinely encountered archaeological finds and can contain an untapped source of short-life organic material – the lipid component of the commodities once processed in these unglazed pots, which can survive over considerable archaeological time periods and quite often in abundant quantities. It makes sense to do more with this organic matter in (and stuck to) pottery. Pottery can provide an additional source of short-life organic material for <sup>14</sup>C dating, where there are no traditional sources (cereals, hazelnut shell etc) available, and/or where further sampling (e.g. through excavation) is not possible or unfeasible.

Methodologically, direct-dating techniques targeting surface residues on pottery are well established, although problematic. The dating of absorbed lipids from pottery has also been attempted, with promising results, but is still in a relatively early stage of development. This paper presents the results of a project designed to test the reliability of <sup>14</sup>C dates from pottery lipids, part of a larger programme of analyses recently carried out on a range of Irish Neolithic pottery vessels.

#### **POSTERS**

##### **F07.01-P-1: Chronometric Dating of Settlement Features with Human Remains from Fortified Settlement of Madarovec culture in Budmerice, West Slovakia**

by ***Peter Barta*** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), ***Pavol Jelínek*** (Slovak Archaeological and Historical Institute – SAHI, Slovak Republic), ***Jana Hlavatá*** (Slovak Archaeological and Historical Institute – SAHI, Slovak Republic), ***Július Vavák*** (The Small Carpathian Museum in Pezinok, Slovak Republic)

The poster presents radiocarbon and dendrochronological dating of two settlement features (F1, F2) with human remains from fortified settlement in Budmerice and contributes thus to the chronometry of Madarovec culture (MC) settlements in Slovakia.

In F1 a severely flexed female skeleton with a number of grave-goods was discovered; F2 represents a settlement pit with ritual deposition of 29 pottery vessels, artifacts indicating bronze metallurgy, two human femurs, a radius, a fragment of human skull, and charred cereals and wood.

We have taken two <sup>14</sup>C samples from F1 skeleton to be measured with high precision. From F2 we have taken a <sup>14</sup>C sample from each of the femurs, two <sup>14</sup>C samples from charred C<sub>3</sub> cereals, and a charred wood sample for dendrochronology. From all the acquired data a series of chronological models (OxCal Program) will be built in order to date deposition of the artifacts. The Budmerice dates will be used together with radiocarbon dates from other MC sites in order to model a better estimate of the culture's duration. Further, stable isotope (C, N) analysis of collagen is to describe the diet of the buried female.

*This work was supported by the Slovak Research and Development Agency under the contract No. APVV-0598-10.*

#### **F07.02-P-1: Radiocarbon and Stable Isotope Analyses on Human Bones from Svodín, SW Slovakia: A contribution to radiocarbon chronology of Lengyel Culture**

by **Peter Barta** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), **Peter Demján** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), **Jana Mellnerová-Šuteková** (Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic), **Maria Kanstrup** (University of Aarhus, Denmark), **Jan Heinemeier** (University of Aarhus, Denmark)

Lengyel culture (LgC) is an important entity of the 5<sup>th</sup> millennium cal BC in Central Europe with large amount of radiocarbon dates. On the backdrop of existing evidence, we bring 7 new <sup>14</sup>C dates from 6 inhumated humans and a terrestrial herbivore. Accompanying stable isotope analyses (<sup>13</sup>C, <sup>15</sup>N) represent the first investigation of palaeodiet of Neolithic population in Slovakia.

The Svodín settlement was established at the beginning of classical LgC (stage I). It is situated in the culture's primary centre, from where its bearers spread only after a certain time gap. To confirm this theory, <sup>14</sup>C dates from the primary centre are of vital importance.

The start-line of our work is dating of stages LgC I–IV elaborated by means of OxCal Program. In models have been preferably used samples with transparent relation to once-lived culture. The priors used were derived from pottery chronologies.

Sampled funeral contexts from Svodín have relative-chronological links with Friebritz (Austria), which also yielded high-quality chronometric data and well-elaborated pottery chronology. Thus, Svodín data have good potential to contribute to better understanding of cultural processes in the Middle Danube in 5<sup>th</sup> millennium cal BC.

*This work was supported by the Slovak Research and Development Agency under the contract No. APVV-0598-10.*

#### **F07.03-P-1: Current State of Radiocarbon Research of Palaeolithic in Czechia and Slovakia**

by **Petra Kmetřová** (Faculty of Philosophy, Comenius University, Slovak Republic), **Peter Barta** (Faculty of Philosophy, Comenius University, Slovak Republic), **Kristína Piatničková** (Faculty of Philosophy, Comenius University, Slovak Republic), **Peter Demján** (Faculty of Philosophy, Comenius University, Slovak Republic), **Mojmír Choma** (Faculty of Philosophy, Comenius University, Slovak Republic), **Dušan Thurzo** (Labrys Ltd., Prague, Czech Republic)

The poster presents Upper Palaeolithic radiocarbon evidence from Slovakia and Czechia constrained by archaeological evidence. It is based on database of published radiocarbon dates developed at the Comenius University in Bratislava. With more than 300 determinations, the database is the largest online dataset of Palaeolithic radiocarbon measurements in central Europe.

First, we introduce the research history with statistics of involved laboratories. Then, we discuss the impact of settlement intensity and research on distribution of investigated sites and their cultural variation. Southern Moravia, with Pavlovské Hills and Brno with its surroundings, provides large series of radiocarbon dates. In Slovakia, Upper Palaeolithic settlement concentrated mainly in southern Middle Váh river valley has yielded several series of radiocarbon dates. The majority of dated samples come from open settlements, while dates from caves are less frequent. Dating of human burials is, understandingly, very rare.

Regarding sample material, charcoal highly predominates (56 % of the dated samples), while bone samples represent approximately 27 % of total dates collected.

Ultimately, the chronological models for individual cultures reflect archaeological priors and take into account characteristics of sampled contexts and materials.

*This work was supported by the Slovak Research and Development Agency under the contract No. APVV-0598-10.*

#### **F07.04-P-1: Modelling the radiocarbon chronology of early Bronze Age burials at Miškovice, Prague, Czech Republic**

by **John Meadows** (Christian-Albrechts-Universität zu Kiel, Leibniz-Labor für Altersbestimmung und Isotopenforschung, Germany), **Piet Grootes** (Christian-Albrechts-Universität zu Kiel, Germany), **Marie-Josée Nadeau** (Christian-Albrechts-Universität zu Kiel, Germany), **Michal Ernée** (Akademie věd České republiky, Czech Republic)

We present a Bayesian model of radiocarbon results from the Eneolithic-early Bronze Age cemetery at Miškovice, Prague. Bones of 20 individuals were dated. Overall, the dates must span several centuries, but more than half the 44 graves are attributed to the classic Únětice culture, and could date to a much narrower range. This creates an unexpected challenge: how to model results from a site with a distinctly uneven temporal distribution of events.

Our solution places the results in chronological sequence based on stratigraphy and grave-good typology. We favour a model that treats the classic Únětice burials as a bounded phase within this sequence, reducing the influence of this phase on the overall chronology. Our model would imply a much lower frequency of burials before the classic Únětice phase. We regard as less realistic a model that implicitly assumes a constant frequency of burials throughout the use of the site; such a model implies a shorter overall duration, and a longer classic Únětice phase. At Miškovice, we could recognize the problem, because most classic Únětice burials have grave goods, but elsewhere the changing frequency of events may not be detectable. Our chronologies may thus be unconsciously influenced by past demographic patterns.

#### **F07.05-P-1: Shore line and radiocarbon dating**

by Per Persson (University of Oslo, Norway), Steinar Solheim (University of Oslo, Norway)

Radiocarbon is a fine way of dating Stone Age sites but the number of dated sites will be limited. Only excavated sites with well-documented context and preservation of organic material can be dated. In our research-area, the Oslofjord area, the numbers of known sites are much higher than the number of radiocarbon dated sites. If all these sites could be dated there would be a better statistic foundation for studying settlement development/human activity than when relying on radiocarbon dated sites only.

From middle Bohuslän in western Sweden to Telemark at the Norwegian coast, a distance of c. 500 km, the shore has been constantly raising since the last Ice Age. This means that as long as we deal with coastal sites we can use their location above sea level for dating. The general rule is that the higher the sites are situated above present sea level, the older they are. In this paper the relevance of shoreline dating of Stone Age sites will be tested from two detail-investigated areas with several radiocarbon dates sites. Also, a hypothesis that shore line dated sites can be useful additions to C14-based models of human activity/demography will be discussed.

#### **F07.06-P-1: Constructing new chronologies in Viking Age Iceland**

by Mağdalena Schmid (University of Iceland, Iceland)

In recent years Icelandic archaeology has experienced significant developments in the application of geoarchaeological approaches; the two key dating techniques employed have been tephrochronology and radiocarbon dating. However, the reliability of  $^{14}\text{C}$  dates can be limited due to both incorrectly resolved site stratigraphy and incorrect interpretation of the taphonomy of dated material. Using Bayesian statistical modelling, this study argues for the necessity of collating multi-disciplinary approaches into more complex chronologies. More precisely, it will discuss how selected dates obtained from radiocarbon, tephra, typology and pollen cores can be integrated with site stratigraphy to construct not only site specific phases of settlement occupation, but also the basis for a regional chronology of the Viking Age that will aid our understanding of the archaeological activity and environmental change in this defined territory.

## Session F08

### Towards new horizons. Advances in provenance methods and their repercussions in archaeology

Saturday, 7 September 2013, 14:00–18:30

Room: EP 110 (Building 1, ground floor)

**Organisers:** **Deborah Olausson** (Lund University, Sweden), **Anders Högberg** (Linnaeus University, Sweden), **Richard E. Hughes** (Geochemical Research Laboratory, California, USA), **Eva Hjärthner-Holdar** (Geoarchaeological Research Laboratory, Uppsala, Sweden), **Johan Ling** (University of Gothenburg, Sweden), **Lene Melheim** (University of Gothenburg, Sweden), **Christian Horn** (University of Kiel, Germany) and **Zofia Anna Stos-Gale** (Independent researcher, UK)

The introduction of physical sciences methods and techniques into archaeology over the past few decades provided archaeologists with baseline provenance data to infer the movements of raw materials (and people?) at various times in the past. The aim of this session is to gather archaeologists who use provenance analyses to describe: 1) how the method(s) used have resulted in new understanding(s) of the specific archaeological questions asked, and: 2) to evaluate the extent to which proxy (provenance) data can be used to distinguish among alternative modes of material movements (trade, exchange, mobility) which carry different repercussions for interpreting the overall role of conveyance in different social settings at different times in the past. Exploring and understanding this latter variability has the potential to elevate material conveyance studies from a “this is where it came from” practice to becoming an integral component of information on the overall social and economic articulations of different groups of peoples at different points in time. These are some of the “new horizons” we will explore in this session.

#### F08.01: Bjurselet revisited: EDXRF analysis as a tool for provenance analysis of Scandinavian flint

by **Deborah Olausson** (Lund University, Sweden), **Richard Hughes** (Geochemical Research Laboratory, USA), **Anders Högberg** (Linnaeus University, Sweden)

The Middle Neolithic caches containing axes and other artifacts of flint, found at Bjurselet and other coastal locations in northern Sweden, have been a focus of archaeological interest since the first cache came to light in 1827. The nearest known source of flint is some 1500 km to the south and many archaeologists have speculated about the geographic origins of these flint artifacts. On the basis of macroscopic features and contextual information, Danish archaeologist Becker proposed in 1952 that the flint originated from deposits on the Danish island of Zealand. As a test of the feasibility of using energy dispersive x-ray fluorescence (EDXRF) analysis to shed light on flint provenance, we analyzed 13 artifacts from Bjurselet with this method and compared the data with those we have generated from a large number of geologic flint sources in Sweden and Denmark. In addition to supporting Becker’s conclusions, the EDXRF results indicate that this analytical method will be applicable to archaeological provenance research on a variety of Scandinavian flint types.

Becker, C.J. 1952. Die nordschwedischen Flintdepots. *Acta Archaeologica* 23:65-79.

#### F08.02: Understanding the role of felsite in Neolithic Shetland

by **Gabriel Cooney** (University College Dublin, Ireland), **Torben Ballin** (Lithic Research/Honorary Research Fellow, University of Bradford, UK), **R. Vincent Davis** (Implement Petrology Group, UK), **Mik Markham** (Implement Petrology Group, UK)

Shetland is the northernmost part of Europe where farming was practiced during the Neolithic. Understanding the role of felsite; a visually distinctive stone source which Neolithic people transformed into polished axeheads and knives, will provide key insights into the character of this island world. At North Roe, mainland Shetland, quarrying of felsite dykes and production activity took place.

Based on Ballin’s pilot survey, detailed survey and mapping of the quarries are being undertaken, identifying the scale and nature of extraction and production processes. This is complemented by provenancing work at North Roe allied to analysis of museum collections, led by Davis and Markham. A range of approaches are being used in provenancing: fieldwork, macro and microscopic petrological descriptions of felsite dykes and objects in museum reference collections, and PXRF on lithics in the field, laboratory and museums on stone tools and rock samples from the North Roe quarry complex. A project GIS (Geographical Information Systems) integrates the provenancing work, the archaeological survey of the quarry complex and the analysis of patterns of distribution of felsite artifacts across in the Shetland archipelago. This paper presents the first results from the provenancing work and its implications for interpreting Neolithic society in Shetland.

### **F08.03: Implement petrography alone proves a British-Irish axe-trade: fact or fiction?**

by **Stephen Briggs** (UK)

England led Europe in lithic implement provenancing from the 1930s. The results apparently demonstrated extraordinary feats of later prehistoric trade or exchange. During eighty years an archive of petrographic implement thin sections was created. Unfortunately, the written quality of their mineral identifications was variable to the degree that (for e.g.) Group VI greenstone was ascribed to hundreds of hectares of outcropping Cumbrian Borrowdale Volcanic. But the celebrated 'factories' cover but a tiny fraction of that area. How can this be explained?

To be sufficiently fissile for flaking, 'factory rock' cannot precisely share its identity with that which produces highly durable polished tools. So where did the material for them come from, if not factory made?

The answer almost certainly lies in re-cycled stone. Natural processes constantly re-distribute incalculable numbers of durable erratic clasts suitable for making artefacts. Artefacts were universally crafted from such a convenient resource. The true nature and identities of the implements will remain inadequately understood until comparable provenancing programmes have been applied extensively to the lithic contents of the superficial deposits. Such investigations will remain unlikely as long as ancestral trading or exchanging stone is considered a better story than scavenging for it. These British difficulties have worldwide implications for an understanding of lithic procurement as well as for the provenancing of geologically superficial deposits.

### **F08.04: From homeland to home; using soapstone to map migration and settlement in the North Atlantic**

by **Amanda Forster** (Institute for Archaeologists, UK), **Richard Jones** (University of Glasgow, UK)

During the early medieval period a Norwegian heritage is evident across the North Atlantic region as a result of Viking period migration and settlement. This blueprint of material culture, language, place-names and politics is visible in Ireland, Cumbria, Atlantic Scotland, Faroe, Iceland and Greenland. Our paper looks at the potential of one aspect of that blueprint, soapstone artefacts, to shed light on the migration of Norse peoples. The premise is simple; Norwegian migrants transported soapstone artefacts to new settlements as belongings. These primary imports contain clues which could identify the homelands of those pioneer settlers by scientific provenance of the artefacts themselves. Provenance studies can also inform understanding of the development of dispersed island societies as settlers responded to the opportunities and challenges presented by their newly adopted lands. The *Homeland to home* project is the converging of two independent studies; a morphological study of North Atlantic soapstone artefacts (Forster) and their rare earth element analysis by ICP-MS (Jones). This paper presents results of provenance studies of objects and raw material against a background of typological classification, highlighting how the results will be used to discuss questions concerning migration, trade networks, resource control, identity and power.

### **F08.05: Provenance studies on prehistoric gold – methods, possibilities and limits**

by **Verena Leusch** (Affiliated Institute of the Eberhard Karls Universität Tübingen, Germany), **Ernst Pernicka** (Affiliated Institute of the Eberhard Karls Universität Tübingen, Germany), **Michael Brauns** (Affiliated Institute of the Eberhard Karls Universität Tübingen, Germany), **Nicole Lockhoff** (Affiliated Institute of the Eberhard Karls Universität Tübingen, Germany), **Frank Melcher** (Geozentrum Hannover, Germany)

It has always been of major importance in archaeological science to establish methods of *fingerprinting* materials with regard to their classification and provenance. By the chemical analysis of the objects, it was possible to shed light on economic networks and hence to gain a more detailed view of archaeological cultures and their ways of interaction. After the success of trace element and lead isotope analyses in reconstructing metallurgical chains of prehistoric lead, silver, copper and copper-based alloys the desire to develop effective methods of analysing other materials of interest grew continuously and became an important tool for archaeology.

In this paper we specifically address the possibilities and problems of provenance analyses of prehistoric gold and outline the use of Laser-Ablation-Inductively-Coupled-Plasma-Mass-Spectrometry (LA-ICP-MS) and X-Ray-Fluorescence (XRF) in this respect. Different (archaeological and geological) case studies shall demonstrate the use of the analytical data and their validity for the archaeological interpretation. General methodological problems (such as the comparison of geological gold with artefact gold and the interpretation of the trace elemental patterns) will be summarised and discussed.



#### **F08.06: Mix and Match – (Im-)Possibilities for Provenancing with Typology and Chemical Analysis**

by **Christian Horn** (*Christian-Albrechts-Universität zu Kiel, Germany*)

The study of ancient metals has been a long-standing tradition from the antiquarian days of the 19th century on. Early on the question was asked: Where does the raw material come from? Provenancing studies became part of the archaeological discipline. By asking this question it was hoped to learn something about exchange networks, the transfer of knowledge or the movement of people and objects. The question remains highly topical, as the current debate about the analysis of lead isotopes demonstrates. Before the revolution of isotope studies archaeologists employed other tools to identify the origin of prehistoric metals: typology and chemical element analysis.

This paper aims to elaborate theoretically on typology and the chemical analysis of metal artefacts. The question raised will ask about the meaning of these tools for provenancing by highlighting their short-comings and possibilities. The goal is two-fold. It is hoped to highlight what these methods actually do provenance: technology, ideas, forms, objects, raw materials. This could, secondly, provide a contribution to the frame of interpretation of the analysis of lead isotopes.

#### **F08.07: The sky disc of Nebra: Astronomy, archaeology and provenance of metals**

by **Ernst Pernicka** (*University of Tübingen, and Curt-Engelhorn-Zentrum Archäometrie, Germany*)

In 2002 a sensational find was rescued from the antiquities market. It consisted of several bronze objects from clandestine excavations. They were reported to derive from a hoard in central Germany including a bronze disc on which the night sky is depicted with gold inlays. In addition, two swords with gold decorated hilts, two flanged axes, a chisel and two arm spirals, all made of bronze, belonged to the hoard. These accompanying finds date the hoard securely to the developed central European Early Bronze Age. The find is so exceptional, because the “Sky Disc of Nebra” is the earliest astronomically identifiable representation of the night sky with considerable implications concerning archaeoastronomy, the history of religion and archaeology.

The scientific investigations centred around the question of authenticity, the provenance of the metals and their production technology as well as the function of the Sky Disc of Nebra. All these questions have largely been resolved and the results indicate that the Bronze Age in Europe is a period of “globalization” of the continent.

#### **F08.08: Scrying, screening, or science: The role of handheld portable XRF in characterising archaeological bronzes**

by **Barry Molloy** (*University of Sheffield, UK*), **Roger Doonan** (*University of Sheffield, UK*)

The integration of lead isotope and trace element analytical data is now well-established as a material-based method for establishing mobility of artefacts in the Eastern Mediterranean during the second millennium BC. Whilst this approach has particular applications it is costly, destructive and lengthy, limiting its widespread use or analyses of significant numbers of artefacts. This paper focuses primarily on trace element aspects of characterisation, more specifically evaluating the role of HHpXRF for establishing mobility of metal artefacts between the Balkans and Aegean in the 13<sup>th</sup> to 11<sup>th</sup> centuries BC.

Compositional analysis, when combined with typological study, permits grouping of metal artefacts in a variety of ways including alloy selection and (potentially) forming typo-compositional groups reflecting regional circulation. This can also reveal deviant artefacts reflecting irregularities in local patterns or practices.

Portable XRF is ideally suited to intensive sampling of bronze artefacts, albeit with established caveats when analysing corroded surfaces. This paper outlines results of an extensive study which has sought to establish broad metal groups in the above regions and to identify “atypical” artefacts. It is argued that typological studies are critical for orienting such analytical study, and that HHpXRF can guide sub-sampling strategies for metallographic and lead-isotope studies.

#### **F08.09: Mapping provenance with geologically informative Pb isotope parameters**

by **Francis Albarede** (*Ecole Normale Supérieure de Lyon, France*), **Hugo Delile** (*Université Lumière-Lyon 2, France*), **Romain Bouchet** (*Ecole Normale Supérieure de Lyon, France*), **Janne Blichert-Toft** (*Ecole Normale Supérieure, France*)

The provenance of artifacts is commonly assessed by Pb isotopes using raw isotope ratios. The large throughput of MC-ICP-MS techniques opens new perspectives of archeological and historical information easily available on a large scale, but data exploitation stumbles over the difficulties of a meaningful visualization of large amounts of numbers with cryptic significance. We recently suggested ‘remapping’ the Pb isotope compositions onto coordinates with geologically

informative content: the Pb model age, which dates the tectonic age of parent metallic ores, and the U/Pb ( $\mu$ ) and Th/U ( $\kappa$ ) ratios of their source (Albarede et al., *Archaeometry* 54 (2012) 853–867). With minimal geological background, these parameters are far more easily recast into a simple geological framework than raw isotope ratios. We compiled maps from published Pb isotope data in particular from the OXALID database. We used these maps to demonstrate on three examples, from Europe, the Western USA, and Central Andes, that these three parameters are geographically and geologically coherent and therefore allow some form of geo-localization of the ores used to manufacture artifacts. We will discuss applications from the Bronze Age to early modern history and give examples of well-controlled historical events that can be traced with the Pb isotope parameters.

#### **F08.10: The flow of metals – examples from Scandinavian Bronze Age artefacts with metals of various origin**

by [Lena Grandin](#) (Swedish National Heritage Board, Sweden), [Johan Ling](#) (University of Gothenburg, Sweden)

Imported artefacts, with characteristic stylistic types, show significant traits that certainly could be connected to trade routes and networks, but they cannot capture the major essence of the metal trade; that is the sources of metal. However, the Bronze Age objects in Scandinavia mostly belong to the Nordic tradition, implying that they were produced locally. Recent studies (Ling et al., 2013), comprising elemental and lead isotope analyses, have confirmed that the objects were not made from local ores. The major flow of metal to Scandinavia seems to have been based on ingots of copper and tin and/or bronze that was cast according to the regional customs. This fact is also supported by the finds of local Bronze Age metal workshops. These metals, locally cast to objects, represent not one or single sources. On the contrary, from the obtained analytical results (Ling et al., 2013) a new complex picture of possible connections between Scandinavia and Europe can be interpreted. The ore regions that supplied metal to Scandinavia have fluctuated throughout the Bronze Age and in a wider perspective two major systems of metal flow from Europe to Scandinavia can be argued; one Atlantic and one via Central and South-east Europe.

#### **F08.11: Provenancing Bronzes from the Swedish Bronze Age – an archaeological perspective**

by [Eva Hjörthner-Holder](#) (Swedish National heritage Board, Sweden)

The aim of the project “Extraction of copper in Sweden during the Bronze Age” is to further the discussion as to whether copper was extracted locally or imported to Sweden during the Bronze Age or if both of these practices could have coexisted. For this purpose, we have carried out lead isotope and chemical analyses of 71 bronze items, dated between 1600 BC and 700 BC. Of these, 33 are objects of spatially associated copper ores and the rest are from adjacent areas. The interpretation of lead isotope and chemical data is based on the direct comparison between the lead isotope data and geochemistry of ore deposits that are known to have produced copper in the Bronze Age. The results of the interpretations are surprising and yield new information. Apart from a steady supply of copper from the Alpine ores in the North Tyrol the main sources of copper are ores from the Iberian Peninsula and Sardinia. The results presented here, from an archaeological approach, open up for a discussion regarding Scandinavia’s role in the maritime networks during the Bronze Age. Thus a new complex picture of possible connectivities and flows between Scandinavia and Europe in the Bronze Age emerges.

### **POSTERS**

#### **F08.01-P-1: Producers and consumers of soapstone vessels in Viking age and early medieval Norway**

by [Gitte Hansen](#) (University museum of Bergen, Norway), [Øystein J. Jansen](#) (University museum of Bergen, Norway), [Tom Haldal](#) (Geological Survey of Norway, Norway), [Sigrid Kaland](#) (University Museum of Bergen, Norway)

How were soapstone vessel production and consumption organised in early medieval Norway? Did many small quarries deliver vessels to a wide range of consumers or did perhaps a few large quarries have a ‘monopoly’ on such services? When living in Norway during this period, how did one acquire a stone vessel? Did you carve it from your own local quarry? Or did you buy it as a commodity on a market? These were some of the basic questions we had in mind when venturing into the soapstone provenancing project. Samples from 146 stone vessels from urban and rural households in the town of Bergen and the Hordaland County, dating to the Viking age and the Early Middle ages have been compared with samples from 43 quarries from the Hordaland, Rogaland, and Sogn & Fjordane counties. A large share of the vessels have been successfully provenanced through analyses of main and trace elements, REE analyses and archaeological methods. The paper presents provenancing results as well as new understandings of how soapstone products moved from the hands of small and large scale producers to urban and rural consumers.

#### **F08.02-P-1: Towards better internal differentiation of the main mining regions of the Iberian Peninsula through the lead isotope analysis**

by **Alfredo Mederos** (Autonomous University, Madrid, Spain), **Jorge Chamon** (Autonomous University, Madrid, Spain)

The Iberian Peninsula is one of the Mediterranean areas with a more complex mineralogy, together with Anatolia. The multiplicity of mines that have been worked during the Prehistory and Roman times, makes difficult a good definition of regional groups. We present a proposal to subdivide some of these groups internally.

#### **F08.03-P-1: Obsidian as a proxy for tracing movement: Myth or fact?**

by **Marina Milic** (University College London, UK)

Obsidian has long been recognised as a proxy for tracing prehistoric exchange and long-distance movement. Matching obsidian artefacts to geological sources and mapping its distribution encouraged scholars to demonstrate short and long-range interactions whether it involved episodes of colonisation or exchange. It has many times been emphasised that the appearance of obsidian from a common source can indicate a form of connectivity between distant communities, but can we consider this observation the end of story?

Taking into account quantity, provenance, spatial and technological data of obsidian assemblages from Neolithic sites in the Aegean, this paper is aiming to explore varying roles that obsidian played in maintaining social relations. In the past 60 years we have learnt much about *which* obsidian is circulating in this region but the questions that have more recently been asked relate to *how* and *why* obsidian is moving around. This presentation addresses the opportunities presented through pXRF and mass-sampling methodologies, and how through these we can begin to assess preferential access to, or desire for, specific sources at any particular site, and see chronological and geographical variability from local, to regional to macro-regional scales.

#### **F08.04-P-1: Copper ores from the Montsant area (Tarragona, Spain) and their use during Bronze Age**

by **Ignacio Montero** (Instituto de Historia, CSIC, Spain), **Carme Rovira** (Museo Arqueológica de Cataluña, Spain), **Martina Renzi** (Instituto de Historia, Spain), **Nuria Rafel** (Universidad de Lleida, Spain), **Mark Hunt** (Universidad de Sevilla, Spain), **Ignacio Soriano** (Universidad Autónoma de Barcelona, Spain), **Mercedes Murillo** (Instituto de Historia, CSIC, Spain)

The Iberian Peninsula has a wide distribution of copper mines, but only in a few of them Prehistoric works are identified. One of these Prehistoric mines, the so called *Solana del Bepo* (where near a hundred of hammer stones were collected) is located in the Montsant mountains (Priorato, Tarragona). Recent archaeological survey has identified a new mine (*Mina de la Turquesa*) in this area where hammer stones is once more the only evidence of ancient works. Both copper mines are undated.

Archaeological data about Chalcolithic and Bronze Age copper metallurgical activity (smelting vessels, melting drops, slag and/or copper ore) is known in two sites: Cave M, near Solana del Bepo mine, and Minferri, located in a plain about 20 Km far away.

LIA from copper and lead ore resources in the Montsant area was obtained to compare to archaeological melting and smelting debris in order to check if these local copper ores were used in Prehistoric times.

*This research was developed by the project HAR2010-21105-C02 (01-02), funded by the Spanish Ministry of Economy and Competitiveness.*

#### **F08.05-P-1: Archaeopetrological approach to the study of the lithic industry from “La Roureda” rockshelter (Vilafranca, Els Ports, Castelló, Valencian country)**

by **Mar Rey Solé** (University of Barcelona, Spain), **Didac Roman Monroig** (University of Valencia, Spain), **Xavier Mangado Llach** (University of Barcelona, Spain)

The Epimagdalenian rockshelter of “La Roureda”, dated to 11,350 ± 50 BP (13373-13122 cal. BP), is located in eastern Iberian Peninsula.

The stone tool assemblage from the Roureda rock shelter includes a total amount of 4639 pieces made on flint and this presentation is the first approach to the analysis of the raw materials through its archaeopetrological study.

Firstly, we proceeded to expose the results of the macroscopic analysis, combining petrological and micropalaeontological analysis of all of the retouched pieces (268 stone tools). Secondly, we expose the first results of the geological surveys we have conducted in the site area, which has allowed us to study several sources of siliceous material.

The analysis of these sources of raw material and their comparison with the stone tools recovered in the Roureda shelter have led us to make a first approach to the possible sources of supply of the epimagdalenien groups that occupied this rockshelter.

This study is the first analysis of the raw materials that has been carried out in this area, so it will be a breakthrough for the knowledge economy of the prehistoric communities and helps us to understand the reason of certain human behaviors.

#### **F08.06-P-1: Transcarpathian contacts of the Late Glacial Societies of the Polish Lowlands**

by **Iwona Sobkowiak-Tabaka** (Institute of Archaeology and Ethnology Polish Academy of Sciences, Poland), **Zsolt Kasztovszky** (MTA Centre for Energy Research, Hungarian Academy of Sciences, Hungary), **Jacek Kabaciński** (Institute of Archaeology and Ethnology Polish Academy of Sciences, Poland), **Maróti Boglárka** (MTA Centre for Energy Research, Hungarian Academy of Sciences, Hungary)

The aim of the paper is to discuss the presence of obsidian finds at the Polish Lowland during the Late Glacial. The characteristic feature for all Late Palaeolithic societies from this area was exploitation of local flint sources. However there are two specific raw materials that seemed to play a different role within LG societies, namely radiolarite and obsidian. That first raw material was procured and worked on a large scale in all the around Carpatian Basin. Obsidian seems to play much more important role. There is no traces of obsidian presence in the Polish Magdalenian as well as mid-LG societies of the Lowland. It is recorded only in assemblages of Sviderian culture. However, except of one Slovakian site, it never played an important role from economic point of view. In consequence, we would like to consider appearance of obsidian not as an economic event but as a sign of maintaining ties between that so mobile societies.

For the determination of bulk elemental compositions of the obsidian collection Prompt Gamma Activation Analysis at the Budapest Research Reactor was applied. The results show that the archaeological objects found in Poland are most similar to Carpathian 1 (C1-Slovakian, Northern Tokaj Mts) type.

#### **F08.07-P-1: Material Movement Modes in the Mediterranean: Obsidian Sourcing Using PXRF Instruments**

by **Robert Tykot** (University of South Florida, USA)

The use of non-destructive X-ray fluorescence spectrometers to identify the geological source of obsidian artifacts in the Mediterranean and other parts of the world has resulted in much larger data sets to address the modes of movement of this material. The production of portable and even hand-held XRF machines also has enabled analytical studies to be conducted in museums and storage facilities, removing many bureaucratic obstacles while decreasing the per sample cost of conducting such research. In the Mediterranean, it has already been shown that XRF and pXRF are capable of distinguishing not only all of the Italian and Greek island sources, but also the sub-sources on Lipari, Palmarola, Pantelleria, Sardinia, and Melos, and this has led to analyses of thousands of prehistoric archaeological obsidian artifacts. This large data set now enables interpretations to be made about important issues such as source access and territorial control, craft specialization, and the modes, frequency, and directions of material movement. Furthermore, this supports socioeconomic hypotheses made at both small and large scales, as well as addressing changes over time and space. Issues raised about accuracy, comparability, and precision of pXRF elemental data also are now largely resolved.

## Session F09

### Where east meets west: the impact of the Mongol invasions on the landscapes of Central and Eastern Europe – integrating science, archaeology and history

Thursday, 5 September 2013, 16:30–18:30

Room: UP 101 (Building 2, ground floor)

**Organisers:** Alex Brown (University of Reading, UK) and Jozsef Laszlovsky (Central European University, Hungary)

In the early 13th century, nomadic Mongol warriors from the Inner Asian Steppes waged a relentless and destructive war against the settled kingdoms of Eurasia, creating the largest contiguous land empire in history stretching from Europe to China. In 1237, the full force of the Mongol invasion of Europe fell upon the Russian Principalities in the east, who were to remain under the yoke of the Mongols for the next 250 years, and subsequently the Kingdom of Hungary following the invasion of central Europe in 1241. These conquests, of a scale never before witnessed, had significant political, social, religious and economic impacts and mark a turning point in the history of the respective territories.

Despite the ferocity of the attacks, there has been comparatively little consideration, beyond the documentary sources, of the potential impact of these invasions on the landscapes of Europe. This session aims to consider the opportunities for developing a holistic approach towards modelling the comparative impact of the Mongols on the landscapes of Central and Eastern Europe, and to consider some of the key research questions and themes concerned with integrating these sources of data. Particular emphasis is placed on the application and integration of scientific analytical techniques, archaeological data and historical sources focusing on the potential ecological consequences of the invasion, evidence for population reduction, settlement abandonment and agricultural decline. What are the challenges and potentials of integrating often divergent sources of data? Papers are welcome on both methodological issues and reviews of existing or emerging data relating to the Mongols across central and Eastern Europe. Papers are also welcome on similar themes related to the Cumans, Turks and Ottoman Empire.

#### F09.01: The Archaeology of the Mongol Invasion (1241–42) – Theoretical and Methodological Issues

by József Laszlovsky (Central European University, Hungary)

The Mongol (Tatar) invasion of East-Central Europe is one of the most important historical events of the High Middle Ages. This relatively short period (1241–42) of rapid military expansion led to the dramatic destruction of the territories of the Russian Principalities (including Kiev), Silesia and Hungary. The sequence of historical events is relatively well documented in contemporary written sources, some of them were created on the basis of eye-witness accounts. The archaeology of the same period offers two main types of source materials: one related to the destruction itself, the other to the long-term impact of the invasion. Various fields of archaeology (battle-field, settlement, urban, church, cemetery, environmental, etc.) have contributed to our understanding of this period and the post-invasion processes, but no comprehensive work has dealt with the international research of the period.

Therefore, the aim of this paper is to summarize the main theoretical and methodological problems of an interdisciplinary research on the Mongol Invasion. One of the main questions of this research is related to the general character of the source materials and to the problem of written sources in the context of archaeological interpretation.

#### F09.02: The Mongol ravages in Hungary reflected by recent archaeological investigations

by Magdolna Szilágyi (Hungarian National Museum – National Heritage Protection Centre, Hungary), Gábor Serlegi (Hungarian Academy of Sciences, Hungary)

In the past decades several Árpáadian-age villages (Hejőkeresztúr – Vizekköze, Cegléd – Madarászhalom, etc.) destroyed by the Mongols have been uncovered in Hungary during excavations preceding highway constructions, road widening, and other investments. The Dunaföldvár – Ló-hegy site uncovered in the track of highway M6 by Gábor Serlegi (Institute of Archaeology, Hungarian Academy of Sciences) in 2009 belongs among these villages. Archaeological observations made during the excavations clearly demonstrate that a violent act put an end to the life of the settlement in the thirteenth century. In addition, a weapon from the site provides direct evidence that it was the Mongols who destroyed the village. What makes Dunaföldvár – Ló-hegy a particularly significant site is that it is located in such part of Hungary where so far there have only a limited number of archaeological and written data been available on the 1241–1242 Mongol ravages. In our paper we seek to investigate how the discovery of the Dunaföldvár site contributes to our former knowledge about the Mongol Invasion of Hungary.

### **F09.03: The "Mons Sacer" and the Mongol invasion in 1242**

by [Annamária Bartha](#) (*University of Szeged, Hungary*)

The historical interpretation of the Mongol siege of Pannonhalma in 1242. is still nowadays mostly based on the text of the Carmen Miserabile, although various contemporary diplomatic sources contradict it. While Rogerius speaks about an unsuccessful siege, written data is known about the destruction of the temple of the monastery by the invaders. How can be these sources paralleled with the results of archeological excavations? How can they influence the picture about the building periodization of the monastery in the 13<sup>th</sup> century provided by art historians? Can the "Mons Sacer" be considered among those places which have survived the campaign of the Mongols, or perhaps just the intensive prose of Rogerius have made too great influence on Hungarian historiography? Along these complex questions the presentation will also investigate the question of the fortification of the monastery under either abbot Uros or abbot Favus.

### **F09.04: Planning after Plunder. Royal Towns in Hungary after the Mongol Invasion of 1241/42**

by [Katalin Szende](#) (*Central European University, Hungary*), [András Vég](#) (*Budapest History Museum, Hungary*)

This paper sets out to explore the influence of the Mongol invasion on the changing concepts on townscape and urban development in the Carpathian Basin. The invaders plundered and devastated many of the old centres of secular and ecclesiastical administration, some of which, especially in the southern regions of the country, never fully recovered. Those settlements, however, which fitted into an emerging new structure of commercially oriented centres, like Pest, Vác, and Várad, regained and even increased their population size. Even more important was the king's discovery that in order to resist similar attacks in the future, new types of fortified settlements would be needed, with a population inside them that would take the initiative to keep up the defences and defend itself. This new royal urban policy that called to life, among other towns, Buda, entailed a different way of thinking about spatial arrangements and topography, urban land use and built structures. Much of this can be investigated with the combination of written and archaeological evidence, by comparing the sporadic references in charters and narrative sources with excavation results and topographical research pointing to evidences of town planning and the conscious transformation of the landscape of towns.

### **F09.05: Palaeoenvironmental perspectives on the Mongol invasions of Central Europe**

by [Alex Brown](#) (*University of Reading, UK*)

In 1241, the full force of the Mongol invasion of central Europe fell upon the Kingdom of Hungary. From the north the Mongols attacked southern Poland, securing their right flank and crossing the western Carpathians to join with armies moving through the eastern Carpathians into Transylvania and along the Danube, sweeping across the Hungarian Plains. Documentary sources describe the widespread looting and destruction of villages and the massacre of their inhabitants, followed by widespread famine and death amongst the peasant population. As much as half of Hungary's population is argued to have perished as a result of the invasion; settlements are recorded still abandoned and fields uncultivated several years later. Despite the documentary evidence for the ferocity of the attack, significant questions remain over the scale and extent of the ecological impact of the Mongol invasions on the landscapes of Central Europe. Previous studies have tended to rely exclusively on the written sources with little exploitation and integration of the palaeobotanical data. This paper summarises the existing palaeobotanical evidence for the ecological impact of the Mongol invasions, set in the context of archaeological and documentary data, and considers the opportunities and priorities for future research.

## G: Other

### Session G01

#### EEA Student Session

**Saturday, 7 September 2013, 08:30–18:30**

**Room:** EP 120 (Building 1, ground floor)

**Organisers:** **Dagmar Vokounova Franzeova** (University of West Bohemia in Pilsen, Czech Republic), **Alice Koziskova** (University of West Bohemia in Pilsen, Czech Republic) and **Peter Tóth** (Archaeological Institute of Slovak Academy of Sciences, Slovakia)

The Student Session should serve particularly to students of Masters and PhD degrees to present their work or research, related for example to their thesis or dissertation. The session has got no thematic restrictions. The purpose of the session should be to provide students with the opportunity to present their own work or research, to establish cooperation with other students and specialists or getting to know colleagues from other departments and universities all over Europe. Equally important is the ability to compare approaches and selected methods. We believe that the opportunity to compare different approaches is very useful and important and its usage for further scientific work could be very helpful. Last and certainly very important benefit is an establishment of interdisciplinary collaboration. We, as organizers of the Student Session, will aim to seek financial support for all the participants of this session.

#### **G01.01: Finding the Mesolithic: Accessing Biomolecular Information from Bone Fragments**

by **Sophy Charlton** (*University of York, UK*)

In recent years, stable-isotope analysis of human remains has arguably shattered the idea of a gradual dietary transition from wild marine resources to a domesticated terrestrial diet with the arrival of farming in Britain. However, this idea of a 'rapid' dietary shift is based upon analysis of very few samples, due in part to the lack of known, identifiable, and un-fragmented human remains dating to the later Mesolithic in Britain. This paper will present on-going research which proposes a novel, integrated, and holistic approach to obtaining more information on the British Mesolithic and the Mesolithic-Neolithic transition, from bone fragments previously considered unidentifiable/unimportant. These samples have little osteological value, but do hold key taxonomic, dietary and genetic information that can be placed within spatial, contextual, and temporal frameworks. Therefore, to contribute new information on this elusive period, this approach provides the first application of a range of integrated scientific techniques – notably collagen peptide mass fingerprinting, stable-isotope analysis, and AMS dating. The use of cutting-edge proteomic technologies alongside more 'traditional' modes of study will allow for the determination of human remains from previously unidentifiable bone fragments, and provide new information on diet, subsistence, and burial practices at the British Mesolithic-Neolithic transition.

#### **G01.02: From the Late Mesolithic to the Early Neolithic: continuity and changes in bone productions from the Volga-Oka interfluve, Russia**

by **Julien Treuillot** (*Pantheon-Sorbonne University, CNRS UMR7041 (prehistoric ethnology), France*)

Our research focuses on the evolution of the bone industries at the beginning of the Atlantic climatic period, in the Volga-Oka area, when the first ceramics appeared in the region. We aim to define the main characteristics of bone industries from the 7th till the 6th millennium BC to better understand daily of these fishermen's & hunters' populations and their adaptation to a new environment. Moreover, in a diachronic perspective, we would like to study relationship between successive industries and groups in the Volga-Oka interfluve when ceramics appeared in these forager societies at the beginning of the 6th millennium. Finally, we shall wonder what information these data, confronted with the other categories of the material (flint, faunal remains, wood tools, ceramics), bring us to realize a palaeontologic study of groups whom the economy is widely turned to the exploitation of the halieutic resources at the dawn of the 6th millennium BC. To answer these questions, we are analysing an extensive and well preserved material through reconstitutions of techno-economical processes of transformation.

This presentation is based on the sites of Zamostje 2, Okaemovo 5, 18, Nushpoly 11 and Sakhtysh 2a and essentially focuses on elements concerning the continuity and discontinuity in bone productions.

#### **G01.03: The genetic signature of domestic pig in the South-Eastern part of the Romanian territory during the Neolithic revealed by ancient mitochondrial DNA**

by **Monica Luca** ("Alexandru Ioan Cuza" University, Romania), **Anna Linderholm** (Durham University, UK), **Adrian Balasescu** (National Museum of Romanian History, Romania), **Greger Larson** (Durham University, UK)

Previous studies identified one haplotype for the domestic pig on the South-Eastern part of the Romanian territory, from the Early Neolithic to the Chalcolithic: the ANC-Y1-6A Near-Eastern haplotype. In this study a new set of 66 samples dated 6000–3700 BC, from 11 more South-Eastern different sites, were analysed. The results showed that after 4500 BC, apart from the Near-Eastern haplotype, an European haplotype was also identified in domestic pigs: the ANC-Aside haplotype. The majority of wild boars possessed the European ANC-Cside haplotype. Still, the ANC-Aside haplotype was found in 8 domestic pigs from 4 different sites and one wild boar from one site. This, together with the results of previous studies on samples from the Southern Romanian area (ANC-Aside haplotype found only in one Mesolithic wild boar and one Neolithic suines sample and the absence of more wild boars with this haplotype in the Neolithic and Chalcolithic), could suggest a domestication of the wild boar with this genetic signature before 4500 BC, outside the Romanian territory, where was later introduced.

*This work was supported by a grant of the Romanian National Authority for Scientific Research, CNCS–UEFISCDI PN-II-RU-TE-2011-3-0146.*

#### **G01.04: Archaeometrical research of flint material from Szeged-Tápé-Lebő, SE Hungary**

by **Éva Halbrucker** (University of Szeged, Hungary)

In 2010 and 2011 systematic field surveys were carried out at two important Neolithic tell sites in Szeged-Tápé-Lebő, SE Hungary. During the fieldwork, numerous Neolithic artifacts, mostly pottery and stone tools were collected. My research is focused primarily on the stone tools made of flint/chert. So far, I have carried out the microscopic analysis of the lithic raw materials, conducted RAMAN spectrometry, etc. The goal of this paper is to present the results of mentioned investigations with special attention to the identification of the raw materials and their geological sources.

#### **G01.05: Archaeological Science in the Neolithic and the Late Bronze Age Pottery Studies – Theory and Practice**

by **Monika Okupniak** (Adam Mickiewicz University in Poznań, Poland)

The scientific analysis of archaeological remains is an important method to examine prehistory. It should be especially fully used for materials which are still hiding a range of information about the past. Pottery and clay materials belong to the most common finds. Their numerous and common occurrence can be found in almost all areas of life in prehistoric societies in Central Europe. This project includes the X-ray fluorescence (XRF) analysis of the Neolithic and the Late Bronze Age pottery from Poland that will be used in further research of these periods. All the analyses were carried out by handheld spectrometer, which is giving a possibility to compare the elemental composition of big range of ceramic fragments.

The goal of this study is to extend our knowledge about pottery production, workshop organization and diversity of preferred clay sources.

The analyses were performed on ceramic materials from archaeological sites in Central Poland. Mostly the Neolithic and the Late Bronze Age clays used for pottery production were compared. Apart from possibilities that scientific methods give to archaeologists, there are also many difficulties which need to be considered. Particularly, cooperation and relation between *science* and *archaeological theory* considering human behavior in the past is important.

#### **G01.06: Terra incognita revisited – Recent discoveries and the revision of old excavations of the Early Iron Age burial mounds in Zagorje (NW Croatia)**

by **Davor Špoljar** (Faculty of Arts, University of Ljubljana, Slovenia)

First discoveries and excavations at archaeological sites in the territory of Northwestern Croatia can be traced back to 1850. From the WWII onwards, archaeological sites in Radoboj and its issue have almost been forgotten in Croatia. The results of the revision of 19th century excavations, as well as modern research of the Early Iron Age complex will be presented. The Early Iron Age complex consisted of several types of prehistoric sites, which were recently discovered in the area of the Strahinjščica Mountain. The recent discoveries of burial mounds in Kumrovec and the finds from the necropolis area will be presented in the second example. A barrow distinction model for NW Croatia will also be introduced that combines natural and social characteristics such as: building material, size, concentration, position,



visibility, costs etc. The region of Zagorje can be considered as a point of contact and intersection among three major geographical units – the Alps, the Pannonian Plain and the Dinaric Mountains. The goal of this paper is to introduce and to discuss the role of Zagorje in the Early Iron Age in Central Europe, regarding landscape, cultural and chronological issues and, therefore, to present this relatively unknown region to European scholars.

#### **G01.07: The stone “portable altars” of the Iron Age, results of classification**

by *Ksenya Konoplyova* (The Moscow state university, Russian Federation)

The presented report deals with the stone altars (vessels, bowls), which are the main feature of funeral ceremony of Iranian-speaking nomads of the Iron Age. They occur in the territory of the South Urals, Aral sea region, Siberia and Northern Black sea littoral and Kazakhstan. This type of artifacts is the mirror of the material and spiritual culture of nomadic tribes. Its classification show new results of the migration of these tribes, exchange contacts, firstly reflect infiltration contacts.

#### **G01.08: Warrior in Archaic Greek Art. Symbolic meaning and cultural importance.**

by *Wawrzyniec Mścicki* (Jagiellonian University, Poland)

The subject of this paper, as well as my PhD thesis, is to compare representations of warriors in art with archaeological and literary sources, to reconstruct the role that warriors had played in archaic society. Archaic Greece is still somehow shrouded in mystery, and archaeology plays an essential role in answering its key questions. Traditionally, scholars operated between well known paradigms using iconography only as a subsidiary source. Since modern view on archaic Greek society has changed dramatically, a redefining of previous theories is needed. For this purpose a new approach had been taken, which focuses solely on the artifact itself and by exploring its archaeological contexts and iconographical meaning builds, a set of hypothesis on how the Ancient Greeks perceive the social figure of the warrior. Then, model based on iconography is confronted with other sources, such as weapon remains and literary evidence. Finally, the paper will provide some answers on crucial questions, from the phalanx debate to the problems with the relevance of the archaeological data and its relations to models of reconstruction.

#### **G01.09: Imitation and identity through pottery production in the Iron Age II in the lower Guadalquivir valley**

by *Violeta Moreno Megías* (University of Sevilla, Spain)

Pre-Roman people known as Turdetani lived in the lower Guadalquivir valley (South-Western Iberian Peninsula) during the Iron Age II, according to Greek-Roman historiography. Their material culture was difficult to identify among neighboring communities, although they had adopted innovations from external contacts.

This paper aims to present an overview of the occurrence of Kuass red-slipped ware in this region. This Punic pottery appeared in the area of Gadir from 4th to late-2nd century BC. Besides the occurrence of imported ware in the lower Guadalquivir, local imitations have been detected. Far from being rare luxury items, this ware was commonly appreciated and demanded. Despite this acceptance of Punic taste due to trends or direct influences, differences between imitations and originals are patently obvious, especially printed decoration.

Moreover, the importation-imitation balance in each settlement varies. These distribution/production patterns are not only adapted to the supply, but also to a desire to emphasize their own identity through distinctive characteristics in local productions.

In this context, this paper analyses how foreign forms and decorations are adopted as a reflection of new tastes and habits in the use of dinner service. Imitations, therefore, may not be just technically poor copies, but an expression of self-determination.

#### **G01.10: Roman Provincial Boundaries. A Multidisciplinary approach to the specific case of Baetica.**

by *Sergio España-Chamorro* (Universidad Complutense de Madrid, Spain)

Roman limits have been an important topic in the bibliography but mostly in the Roman Frontiers of the Empire. Limes Congresses are a good proof, but not for provincial boundaries. These, however, have not received desired attention.

Currently, this topic is getting more important, but it is still not a completely developed field of study. Sometimes the overlay of boundaries, their fuzzy appearance and other complications make this job difficult. A multidisciplinary

approach combining traditional perspectives, such as reviewing the Classics, with the study of archaeological remains, such as milestones, onomastic epigraphy, numismatic, *tituli picti* (amphoric epigraphy), pottery... can sketch it out more clearly. Moreover, it will define more accurately provincial territories. Boundaries are not about a simple line, but there are more socio-economic factors that are influenced by Roman provincial policies as well as identity factors

#### **G01.11: Rural settlement in Moesia Inferior in the context of frontier area (Limes)**

by [Viktoria Chystyakova](#) (Charles University, Czech Republic)

My paper focuses on the development and transformation of the village settlement in the Roman province *Moesia Inferior* in the context of the frontier area. The issue of the rural settlement will be presented from a new perspective: economical and social context focusing on Limes and integration of the Roman culture in territory of a new province. Based on previous archaeological research, epigraphical sources, current theoretical knowledge of development of Roman countryside in *Moesia Inferior* will be presented. Paper will demonstrate extension of *villa rustica* (presented map) with presentation of *villa rustica* in Bulgaria with basic typology, which is adapted to local specifics. Partial changes in rural environment are also presented by non-urban settlement – *vicus*, which could be an example of an influence of military presence on the changing of the local landscape.

The main goal of that paper is demonstration and explanation of changing (social, economical, ethnical) of the rural society under Roman rule and Roman cultural integration focusing on the frontier area. This paper presents extension of rural settlements and their connection to military units, roads and larger urban sites.

#### **G01.12: Jewellery and Ornamentation of the Roman Iron Age in Estonia**

by [Maarja Olli](#) (University of Tartu, Estonia)

This paper is based on my Master's thesis, which is focused on ornaments and ornamentation motifs during the Roman Iron Age in Estonia. It is the time period when the amount of jewellery had increased rapidly bringing new symbols and motifs into Estonia. The core area of the period can be considered the south-eastern coast of the Baltic Sea.

One of the goals of my thesis is to understand how those new items were taken into the local culture and how they were used. Different theories of style, trade and practice theory are used for trying to explain that. It is also interesting to compare the processes which took place in Estonia with the ones in Germania and of the lands of the Baltic people.

The most popular jewellery and ornamentation motifs of Roman Iron Age are distinguished in different regions of Estonia. The possible origins of the era's ornamentation are searched in mythology, textiles and the Pre-Roman Iron Age. Also, the continuity between the Roman Iron Age and Migration period based on jewellery and ornamentation is observed.

#### **G01.13: Who was allowed to see and use gems with portraits of Roman emperors and empresses? – Study based on some specimens from the Constantine Schmidt-Ciążyński collection.**

by [Paweł Golyzniak](#) (Jagiellonian University, Poland)

Gems are considered to be some of the most valuable objects in ancient art. Those with representations of Roman emperors and empresses seem to have special meanings. There are examples of magnificent works and also common ones. The question of how the members of emperors' families wanted to be depicted still remains unsolved. However, a study based on the objects from the Constantine Schmidt-Ciążyński collection makes it possible to ascertain if there is any association between the type of gem and the portrait. The collection contains both rough and marvelous examples and, for this reason, comparisons can be made between the two and also to a large amount of other objects of glyptic art. As a result, it is possible to conclude that some gems were made to see only by a few, while others were intended to be used by the masses and may even be related to political propaganda.

#### **G01.14: Flora in Roman and Early Christian Art**

by [Petra Zviřečí](#) (Charles University, Czech Republic)

The paper presents conclusions and selected parts of a Master's thesis. The work discusses the iconography of selected plant species in the Roman and Early Christian art and further, it shortly deals with most considerable elements of vegetable ornaments and its development and symbolic meaning of the plants in connection with a religion and mythic

tradition. The author gained information from archaeological evidences, writings of antique authors, in chapters dealing with Christian period from Bible and apocrypha, as well as from modern works related to the issue in order to cover the differences in symbolic meanings of plants after oncoming of Christianity, to determine, whether those plants were depicted onwards and in which context.

#### **G01.15: Endogenous population or migrant population: biological characterization, composition and funereal recruitment of a population dated to the Late Antiquity in Angers (North West of France)**

by *Lola Briceno-Boucey* (Université Bordeaux 1, France), *Mark Guillon* (Université Bordeaux 1, France)

An excavation in Gare Saint-Laud, Angers (North West of France), in 2000 allowed to reveal a part of a burial necropolis (115 graves) dated according to the furniture from the second century to the early fifth century.

The objective of our work was therefore to characterize the population buried, through the study of gender, age, and discrete characters. We wanted to highlight specificities of its composition and discuss the mode of funereal recruitment and selection. In addition, we compared this population with other adjacent necropolis, belonging to the same chronological context, but manifestly not the same chrono-cultural context.

Moreover, ten burials of the necropolis are arranged in a particular direction, different from the rest of the tombs. In addition, four graves of this group contained characteristic furniture: ceramics and silver fibulae, specific for the German Eastern population (Tchernjakov civilization).

Based on the facts that the presence of the Roman army in Angers for this period doesn't make any doubt, and that some "barbarians", or German Eastern population, were incorporated into the Roman army, we had the opportunity to consider, on a small necropolis scale, the issue of migratory waves of people from the East occurring at the scale of the Gauls.

#### **G01.16: Kushan Influences in Bengal: An Overview**

by *Munmun Mondal* (University of Calcutta, India)

The early centuries of Christian era witnessed the growth of Kushana empire in Indian subcontinent. The Kushanas, who were basically the nomadic people of Central Asia, hailed beyond the Pamir and Oxus region and extended their territory upto the Pataliputa of Bihar in India. The most remarkable achievement of this period was the proliferation of trade and craft. Though Bengal was never formed a part of the imperial Kushan rule, but the Kushan influence had drastically changed the contemporary socio-economic lifestyle of the people of Bengal. Basically during the 1st to 4th century AD, the international trade contributed a lot in the building of a flourishing economy of Bengal. The commanding geographical position of Bengal, presence of large number of rivers and the position of Bay of Bengal were favourable prerequisite to the growth of maritime activities in Bengal.

The wealth generated through trade and commerce was mainly utilised for the economic and material prosperity of the communities, which in turn effected the pattern of development of different urban centers in Bengal. It ushered a new era by introducing many new elements in the daily life of the common people which was hitherto unknown to them.

#### **G01.17: Small feudal mansions and their hinterland in the Late Medieval period and Renaissance: Reconstructing historical landscape and society**

by *David Novák* (Academy of Sciences of the Czech Republic, Czech Republic)

In the framework of my thesis there were gathered 481 potential small feudal mansions in the area of regions of Beroun, Kladno, Rakovník and Rokycany (Central and Western Bohemia). About at least 225 of them there are no doubts about their existence. This database makes a stable base for statistical analysis and further synthesis and interpretation. ESRI ArcGIS Desktop software was used for managing data, for spatial analysis and also as a tool to create 3D models of certain sites. The goal was to make detailed insight into evolution of entire region as it is reflected by small mansions of nobility, based on clearly structured and precisely defined analysis (mainly Principal Components Analysis etc.). I was able to demonstrate, that progression is not constant both in synchronous (horizontal) and diachronic (vertical) view. Frame consisting of natural conditions (natural factor), older structures in the landscape (settlement factor) and property relations (human factor) seem to be the reason for that inconsistency. Last, but not least, there are discussed formal and spatial attributes of small mansions of nobility from the 13th to 17th century. Currently, the reasearch continues with field work and non-destructive survey of regions included in original thesis

#### **G01.18: Medieval Pottery from Bohemian-Moravian Highland: Past Research and Current Approach**

by **Kateřina Doleřalov** (Faculty of Arts, Masaryk University, Czech Republic), **Jakub Těšnohldek** (Faculty of Arts, Masaryk University, Czech Republic), **Karel Slaviĉek** (Faculty of Arts, Masaryk University, Czech Republic), **Zdeňka Boĉkov** (Faculty of Arts, Masaryk University, Czech Republic)

The paper presents results of several diploma theses based on various approaches to medieval pottery research, including summary of medieval pottery cognition in the region of Bohemian-Moravian highland. Uniform database system was created for needs of research on pottery excavated at Rokštejn castle (Jihlava). Usage of the system is presented here based on pottery finds from the lower palace of Rokstejn castle.

Analytical methods, such as XRF, XRD, TG/DTA and optical microscopy were applied to determine chemical, mineralogical and microstructural composition of pottery and clay samples collected in surroundings of the castle. Obtained data contributed to discussion about provenance and technology of ceramics from the oldest construction phase of the castle.

#### **G01.19: A methodology for studying shipwreck sites formation processes**

by **Luana Batista-Goulart** (Federal University of Sergipe, Brazil)

Comprehending the role that formation processes play in the constitution of an archaeological site is fundamental for a more precise interpretation of the data collected in it. Concerning shipwreck sites, such processes possess certain peculiarities which must be taken into account. However, that subject is not sufficiently developed in the literature, lacking a comprehensive treatment of all kinds of processes. Hence, the present work aims at proposing a methodology for studying archaeological formation processes that influence shipwreck sites. To this end, a bibliographical review is conducted focusing on shipwreck sites. The purpose of such review is twofold: (1) studying how this problem was approached at previous works (2) identifying issues in those approaches that could be improved. After that, we present the methodology hereby proposed, which aims at studying the influence of formation processes in an archaeological site of interest in an embracing way, considering natural and cultural factors that act at the pre-depositional, depositional and post-depositional periods.

**Key-words:** Archaeological formation processes, Nautical Archaeology, Archaeology at Wet Environments.

#### **G01.20: Studying Archaeology in Europe**

by **Vesna Pintariĉ Kocuvan** (University of Primorska, Slovenia)

Within Europe, professional archaeology is an activity regulated according to local legislative structures, however, archaeology is characterised within a common theoretical, cultural and chronological framework, which makes it possible for individuals to study archaeology, and to practice as professional archaeologists throughout Europe.

The Studying Archaeology in Europe project supports the experiences and needs of archaeology students across Europe who will become the professional archaeologists of the future. The project improves the information and personal support available to students in order to enhance future international exchanges and experience, and potential future employment opportunities through the EU.

The project gathers and shares information on:

- the organisation and content of archaeological studies in the partner countries
- the mobility opportunities for students to work or study in other countries
- the identification of opportunities for voluntary work
- the provision of information, advice and guidance on how best to find employment after studying.

This information is made public through a dedicated website, which also includes a peer-support network for students.

## POSTERS

### **G01.01-P-1: Roman-provincial brooches from the Early Roman Period from the south of the Central European part of so called Barbaricum**

by Jan Frýzl (*University of West Bohemia, Czech Republic*)

The aim of this paper is to outline the questions on the Roman-provincial brooches from the Early Roman Period in the Bohemian region, Moravia, northern part of Lower Austria and Slovakia. This issue has so far been insufficiently studied from the perspective of wider geographic area. The paper is based on the evaluation of numerical representation and geographical distribution of particular groups, eventually types of observed artifacts according to sub-regions in surveyed territory. The question of contacts between the Roman Empire and the Central Europe, so called Barbaricum, is also discussed.

### **G01.02-P-1: Links and Traditions: Pottery of the 4–3rd millennium BC from Karelian Isthmus (North-West Russia)**

by Margarita Kholkina (*Saint Petersburg State University, the Faculty of History, Russian Federation*)

Distribution of different types of organic- and asbestos-tempered pottery in the Gulf of Finland region at the end of 4<sup>th</sup> – 3<sup>rd</sup> ka cal. BC relates to complicated socio-cultural processes, which took place at that time in the Eastern Europe Forest Zone.

Based on typological analyses, several types of pottery with organic and asbestos temper were defined from collections of 15 archaeological sites. Micromorphological analysis of samples from different groups of pottery confirmed the proposed classification. Organic-tempered Late Combed Ware seems to be continuation of local Typical Combed Ware tradition, widely extended in the Gulf of Finland region. Corded Ware relates to the new tradition that appeared as a result of migration of new population. Also some pottery types with organic and asbestos temper indicate appearance of new traditions. Most of these groups have analogues on neighboring territories of Finland, Estonia and Karelia.

Based on of pottery study it is also possible to define “tableware” and “cookware” within each tradition. Most groups of pottery are often represented in the same archaeological context. It can be considered as an evidence of prehistorical integration processes.

The study was supported by RFBR, research projects No. 12-06-00348a “Geoarchaeology of Karelian Isthmus”.

### **G01.03-P-1: Archaeometric analysis of the Iwno Culture pottery obtained from the selected sites located on the Chełmno Land, Poland**

by Łukasz Kowalski (*Nicolaus Copernicus University, Poland*)

This paper presents the archaeometric characterization of 70 prehistoric pottery samples excavated from the following archaeological sites located on the Chełmno Land (Poland): Biały Bór, Grudziądz-Mniszek, Małe Radowiska, Skrzypkowo, Toruń-Grębocin, Wałczyk and Zieleni. All the sherds have been classified into Iwno Culture.

The chemical composition of the studied ceramics was identified by *Energy-Dispersive X-ray Spectroscopy (EDX)*. EDX analysis was used for the quantitative determination of the following elements: C, Na, Mg, Al, Si, P, K, Ca, Ti, Mn, Fe and Cu. EDX investigations were carried out using a Energy Dispersive X-ray Spectrometer Quantax 200.

Data set was statistically elaborated using the similarity analysis, including the method of principal components (PCA), discriminant analysis (DA), and cluster analysis (CA) as well. All the statistical methods allowed to make some hypotheses about the possibility of cultivating a pottery producing tradition during the Iwno Culture period on the Chełmno Land. On the basis of PCA results, the relationship between pottery technology and its elemental composition has been established. Furthermore, the information given by DA and CA reveals some similarities between technological groups of the examined pottery and its provenance as well.

### **G01.04-P-1: Polished Stone Tools of the Early Bronze Age in Central Europe**

by Vlastimil Král (*Charles University in Prague, Czech Republic*), Petr Menšík (*University of West Bohemia in Pilsen, Czech Republic*)

The paper aims to present the polished tools from the Early Bronze Age regarding their type characteristics and find contexts. The importance of the continuity and discontinuity and the questions about the intrusions at the turn of the Neolithic period and the Early Bronze Age will be discussed. The finds of the stone axes from the Neolithic period

prevail in the find context from the Early Bronze Age in the region of South Bohemia. Other types of the polished stone tools have been observed only rarely or not at all. It is possible to presume on the basis of analyses of the polished stone tools that the continuity from the Eneolithic period (intrusions?) prevails in Bohemia and only a small amount of new artifact types emerges. The situation is slightly different in the space of the neighboring Central European countries.

#### **G01.05-P-1: The geographic origins of slaves at The Cape during the colonial period**

by Linda Mbeki (*Vrije Universiteit Amsterdam, The Netherlands*), Karel Davids (*Vrije Universiteit Amsterdam, The Netherlands*), Henk Kars (*Vrije Universiteit Amsterdam, The Netherlands*)

In 1652 the Dutch East India Company (DEIC) established a refreshment station at the Cape of Good Hope. This Settlement soon became a cosmopolitan slave society with captives from all corners of the Indian Ocean world. The aim of this research is to reconstruct the identities of the slaves using a historical archaeological approach. As the Company kept meticulous records, we are able to interrogate the written record using archaeological data. Clay pipe stem analysis of fragments found in the DEIC slave lodge will give us insight into the slaves' leisure time and consumer patterns over the years. Isotope ratios can cast light on the geographic origins of the non-European underclass at the Cape and the slave networks of the Indian Ocean world. Faunal remains can be compared to documented rations to determine what and how much the slaves were eating. Together this information will shed light on the lives and identities of the DEIC slaves of Cape Town.

#### **G01.06-P-1: The Data Modelling of the Early Medieval Burial Activities**

by Petr Mudra (*University of West Bohemia in Pilsen, Czech Republic*)

This poster deals with the issue of data modelling of the Early Medieval burial activities in Bohemia and Moravia. Inhumation burials became commonly practiced during this period (from the end of the 8th till the beginning of the 12th century AD). Data modelling is used as a part of archaeological analysis via descriptive system. I apply entity relationship (E-R) diagrams – the data modelling method introduced by Peter Chen. This method has been widely used in the field of information systems designing. The basic units of the E-R diagram are entities (the objects of the real world), their attributes and mutual relations. As a result the data model of Early Medieval funerary activities was created which has to be implemented in and tested by the database. In this model I emphasise the difference between the past reality and the character of the archaeological record as well.

#### **G01.07-P-1: Application of the chaînes opératoires technological approach**

by Klara Neumannova (*University of Hradec Kralove, Czech Republic*)

The chaînes opératoires concept of the study of technology is especially a domaine of French archaeology especially. It offers a different vision of the relation between material culture and the social background of its production.

This approach emphasises strong implications of ethnoarchaeology, which proves that the morpho-stylistic classification does not always correlate with social entities, contrary to the technological features maintained by different mechanisms. The technological variability reflects deeper rooted and more stable aspects of social identity.

For recognition of technological traits a combination of analytical tools is used – the macroscopic study allows non-destructive identification of technological groups within the assemblage. Then the petrographic analysis verifies and precise the data and the archaeological experiment also contribute to efficiency of this method.

The application on diverse archaeological assemblages brings various restrictions. I will illustrate the potential and problematics of this method on two different archaeological contexts – Bell Beaker period burial sites and the LBK settlement site Bylany, representing particular pottery technology developments.

#### **G01.08-P-1: Textile tools during the Bronze Age in Eastern Romania**

by Dănut Prisecaru (*Alexandru Ioan Cuza University of Iași, Romania*)

Although in many countries of Europe these kind of studies are at an advanced level, in Romania there are no such approaches. I aim to study fibers and textiles in the Bronze Age in Eastern Romania, starting from the artifacts used to process and produce them. My intention is to present the state of research at this moment, and to propose a typology for the artifacts discovered in various sites that I've measured. The features of these "small finds" have to be recorded

completely, in order to give us the possibility of some experimental approaches. Furthermore, we have to appreciate that these artifacts are sometimes the only data we have about textile production in prehistory.

#### **G01.09-P-1: Solving the Puzzle of the Bronze Age Stone-Cist Grave in Jõelähtme, Estonia**

by *Eve Rannamäe* (University of Tartu, Estonia), *Liivi Varul* (University of Tartu, Estonia)

The first above-ground grave type that appeared in Estonia in Estonia is the stone-cist grave (used from Late Bronze Age to Early Iron Ages). In 1980's due to rescue excavations in Jõelähtme in Northern Estonia, 36 stone-cist graves were fully excavated. Current case study focuses on the grave no 19. Our goal is to find out what range of events regarding this grave can be reconstructed, if we can rely only on inconsistent, yet sufficient documentation and fragmented osteological material.

Based on the material it is possible to determine the number of species and individuals, also age, sex, pathologies and taphonomical features. At least, three individuals were buried in grave No 19, but only one of them had a complete skeleton. Additionally, many animal and bird species were present; bones from three dogs among them. Since the documentation shows mostly general location of the remains, the contexts of single finds cannot be assessed. Still, we provide a discussion on how do the human remains relate to each other, why there are numerous animal and bird species, and, based on <sup>14</sup>C datings, how are human and animal bones correlated.

#### **G01.10-P-1: The population of Middle-Don area in the Khazarian time according to the data of anthropology.**

by *Irina Reshetova* (Institute of Archaeology of Russian Academy of Sciences, Russian Federation)

The goal of the research is to reveal the peculiarities and features of the bearers of the traditions of the Saltovo-Mayaki culture – of a polyethnic population of the VIII–IX centuries, which was in the composition of the Khazar Kaganate.

To achieve the main goal of research was formed by a complex of methods for reconstructions of the peculiarities of the way of life this population, including paleodemographic program, morphological measuring programs (cranio-, osteo-), fixing markers of stress, traumatic injuries, the study of trephinations, the study of isotopic composition of bone tissue.

On the basis of anthropological materials of Saltovo-Mayaki culture were allocated two groups of the population. The first of which is presented consolidated Alan groups. The second is characterized by high variability of a number of anthropological and environmental attributes, however, the combined features of the demographic structure of the society, as well as a high frequency of occurrence of the symbolic trephinations – sub ethnic marker, has received a wide circulation on the other East-European territories, first of all on the territory of the great Hungarian plain.

#### **G01.11-P-1: Border of the Lusatian and Knoviz cultures in the region of Central Elbland in Bohemia**

by *Jindřich Šteffl* (University of West Bohemia, Czech Republic)

This poster aims at the evaluation of spatial structure of the sites of the Knoviz and the Lusatian cultures in their contact zone with respect to the question of the form of the border between these cultures. My attention is focused mainly on the question of the border in a Central Bohemian region Elbland, since this locality certainly had witnessed mutual contact and influence of these two cultural circles of the Urnfields in the period of the Early and Late Bronze Ages. It is also the only region in Bohemia where these two cultures moved their borders, for in the region of Cheb and the Ore Mountains, where they also co-existed, the border was entirely stable during the whole Early and Late Bronze Ages. The aim of this paper is to find out the border between the Knoviz and the Lusatian cultures with application the analysis of distribution maps. It was delimited the most westerly border of the Lusatian culture and the most easterly border of the Knoviz culture.

#### **G01.12-P-1: Glass beads srednetsninskaya Mordovians as a historical source**

by *Nataliya Terekhova* (Russian Academy of Sciences, Institute of archaeology, Russian Federation)

Srednetsninskaya Mordovians lived in the southern part of the East European Plain in VII–XI centuries. The material culture of this tribal group of Mordovians known on materials of the funerary monuments. Frequent finds in burials are glass beads. The total number of which is 36091.

Beads are a valuable source of history and archaeology srednetsninskaya Mordovians, allowing to solve a number of important issues.

During research the systematization of glass beads was carried out, the chronological scale of their existing was developed, the spectral analysis of glass chemical composition was held.

This allowed to conclude about the place of beads in a suit of local Mordovians, their social significance, regional feature sets necklaces. Designed chronology can be the basis for the construction of the chronological scale grave implement, and the analysis of the results of chemical analyzes allowed us to determine areas of glass, which this beads were made of.



## Session G02

### General session

Friday, 6 September 2013, 08:30–18:30

Room: UP 108 (Building 2, ground floor)

Paper and poster proposals presenting topics which do not correspond with the content of thematic sessions.

#### **G02.01: Strategy or improvisation? The standardized use of expeditive tools at the Early Neolithic flint mine of Casa Montero (Spain)**

by Marta Capote (CSIC, Spain)

When mines lack elaborated tools such as antler or knapped stone picks, it is difficult to recognize mining implements, but also to interpret them. Apart from establishing which traits can be used to distinguish actual tools from waste, we need to analyze them beyond their characterization as opportunistic. Casa Montero lacks formal standardized tools, but 769 tons of flint were extracted in probably less than 100 years. This suggests that efficient methods must have been developed. For this reason, when looking for tools among the lithic remains recovered at the site, we have focused on recognizing patterns in the way pieces with variable shapes and sizes were used, instead of on classifying according to standard shapes. As a result, a relatively small group of potential mining tools has been identified. It is composed of clasts obtained from secondary deposits and a small number of flint-knapping residues. They were employed without investing time in elaborating them. However, the analysis of their raw materials, macroscopic use traces and working surfaces has yielded interesting results in terms of work organization. This technology may have been expeditive, but it was not improvised. On the contrary, working procedures were consistently repeated in every mining event.

#### **G02.02: Lithic Evidences of Prehistoric Copper Mining from the Southeast of the Iberian Peninsula**

by Selina Delgado-Raack (Universitat Autònoma de Barcelona, Spain), Nicolau Escanilla (Universitat Autònoma de Barcelona, Spain), Roberto Risch (Universitat Autònoma de Barcelona, Spain)

Southwest Iberia and the northern part of Andalucía have been the focus of archaeo-metallurgical research for decades. Contrary, Southeast Iberia, where similarly rich ore deposits existed, have deserved less attention and little advance has been achieved in terms of the identification of prehistoric mining activities. The intensity of modern mining and a complex metallogenetic combination of copper ores in this region suppose a further burden to the preservation and identification of ancient ore extraction.

This situation has recently changed since a systematic geo-archaeological survey program in this region has been assessed. Macro-lithic artefacts could be identified at several mineral outcrops and provide new insight into so far unnoticed prehistoric mining and ore processing tools. The aim of this contribution is to expose the analytic criteria that can support the study of such assemblages, which are often difficult to recognize given their expedient character. Geomorphological and petrographic analysis are combined in order to determine provenience and mechanical properties of selected rocks. Morpho-technical and functional approaches, including use wear and residue analyses, give insight into the way these tools were handled and used. Finally, we will discuss the implications of these findings in the context of the early metallurgy of southeast Iberia.

#### **G02.03: The threads that bind: producing textiles and sustaining the community in the Aegean Bronze Age**

by Joanne Cutler (University College London, UK), Eva Andersson Strand (University of Copenhagen, Denmark)

The making of cloth was a fundamental activity in Aegean Bronze Age societies. As in many societies, both ancient and modern, there would have been a need for a wide range of textiles, including textiles for clothing, bedding and coverings, as well as for a variety of other purposes. The textile production process – from the acquisition and preparation of the raw material to the finished fabric – is a complex one, involving many stages; meeting the considerable demand for cloth would have required a substantial investment of time, as well as specialised craft knowledge. Textiles would also have been produced within different organisational modes.

This paper will consider textile production in Bronze Age Aegean communities in relation to the concept of 'care', examining the gendered nature of the work, the time devoted to related tasks, and the role of cloth manufacture in the welfare and maintenance of different social groups within Aegean societies.

#### **G02.04: Interdisciplinary approaches to the archaeology of Copenhagen**

by ***Hoda El-Sharnouby*** (*The Copenhagen Museum, Denmark*)

Natural science and the humanities both played pivotal roles in the understanding of the archaeology of Copenhagen from an early stage. Yet, cooperation between various specialists was limited, generating little interdisciplinary dialogue. As a result, assumptions related to historical, archaeological and archaeobotanical research stayed relatively unchallenged since the early 1900s.

In recent decades, archaeological activity within the medieval city in combination with an increasing number of absolute dates and archaeobotanical data has called for a new approach to the material at hand.

One crucial approach has been the creation of an active interface between the various fields of specialism, with relevance for the understanding of urban life in Copenhagen. Recent years have seen an increased dialogue between archaeologists, finds specialists, ethnologists, historians and natural science specialists from an early planning stage of projects. This has offered the archaeological establishment the opportunity to draw on a wider range of expertise, and to create a fruitful environment for rethinking old assumptions concerning the origins of Copenhagen. The result is an ongoing, dynamic development of research, sampling, and excavation methods that is inclusive of a varied but relevant field of specialisms.

#### **G02.05: The spatial organization of the residential spaces, Gulf Region: An ethno-archaeological case study**

by ***Fatema AlSulaiti*** (*Islamic Arts & Architecture, Qatar*)

This study focuses on the spatial organization of the residential settlement in the Middle Eastern Arab region. It addresses innovation in the relationships between the material, form and the social-cultural dimensions of the space. Samples of different residential buildings and settlements have been examined as ethno-archaeological case studies. The paper documents and explores the processes of manipulating spaces to create the ideal area. It aims to assess some assumptions on the usage of space in Islamic archaeology.

The analysis of data proceeds from the physical environment to subsistence technologies to a consideration of buildings types and the relationship between their location and resources, subsistence and interaction. Some settlements are used to demonstrate how a village or town functions and social setting for its residents. The settlement surroundings serve as a basis for considering techniques for the recognition of off-site activities; and how space is formed with an emphasis on the social factors.

Spatial alteration and areas tend to be multifunctional. Such possibilities should be incorporated into any archaeological model of settlement pattern and spatial distribution. It is also important that archaeologists not underestimate the roles that scale, recognition and separation of cumulative events play in understanding the spatial dimension of archaeological remains.

#### **G02.06: Preparing for archaeotourists: What can we do?**

by ***Ben Thomas*** (*Archaeological Institute of America, USA*), ***Meredith Langlitz*** (*Archaeological Institute of America, USA*)

The growing interest in archaeotourism has resulted in greater numbers of visitors to archaeological sites. While additional visitors can generate more revenue for local interests, they also increase human impact on the site. Unfortunately, in many cases, not enough has been done to account for these changes. Sites are unprepared for the increased tourism and often do not have the resources or services to meet the greater demand. A few years ago, the Archaeological Institute of America (AIA) worked with the Adventure Trade Travel Association (ATTA) to put together a manual on responsible tourism for visitors, site managers, and tour operators. This paper discusses the need to prepare for visitors, to collaborate with the tourism industry, and set guidelines for site usage while providing insights into the positive nature of the collaboration between the AIA and ATTA.

#### **G02.07: Laser aided profile tracing and electronic processing of ceramic data**

by ***Peter Demján*** (*Comenius University in Bratislava, Faculty of Philosophy, Slovak Republic*)

The task of documentation and processing of larger ceramic assemblages strains the limits of the human ability to simultaneously perceive and compare hundreds of finds from multiple contexts. Projects concerned with processing finds from older excavations also often face budgetary and personnel constraints which make a manual documentation of the whole find assemblage virtually impossible. In this paper we present a system for laser aided tracing and auto-

mated drawing of profiles of ceramic fragments, developed as part of the project Preparation of complex publication of archaeological material from the polycultural site of Svodin-Busahegy (VEGA 1/0924/12). It enables rapid processing of the three-dimensional archaeological material whilst maintaining the expert input of the archaeologist regarding selection of the plane of section and orientation of the finds. The output of the system can be displayed in form of a traditional find catalogue and the acquired profiles and diameters of the ceramic vessels can be further mathematically and statistically evaluated in terms of similarity and dissimilarity across find contexts.

#### **G02.08: How to establish a contemporary presentation of the past**

by *Cecilia Gustavsen* (Slottsfjellsmuseet, Norway)

Archaeological museums provide information about the past to the public. This is mainly done through exhibitions, consisting of texts and artifacts on display. Knowledge about former societies and incidents might enlighten our present time and trig the visitor's curiosity and interest. Museums are often visited by school-classes and students in that purpose. Thus the archaeologists and pedagogues at museums have a great societal responsibility to "create" a past that is understandable and meaningful – but also actual. Museums are dependent on visitors, and to attract people it is important to keep up with time. New questions will be asked, new dialogues are demanded.

Slottsfjellsmuseet, in the medieval town Tønsberg (Norway), is in the process of establishing a new permanent medieval exhibition. Beside original artifacts, new technical solutions with interactive possibilities will be presented.

This paper will deal with the following questions: How can we face the challenges in a fast-changing time in the best way? Is it possible to be flexible without being unscientific or superficial in how we present our past?

#### **G02.09: The invisible home. Identifying household clusters in the Late Copper Age: a case study from Balatonkeresztúr-Réti-dűlő**

by *Szilvia Fábrián* (Hungarian National Museum, Hungary), *Péter Csippán* (Eötvös Loránd University, Hungary), *Gábor Serlegi* (Research Center for the Hunanities, Hungarian Academy of Sciences, Hungary), *Márta Daróczi-Szabó* (Eötvös Loránd University, Hungary)

The basic unit of production and reproduction within early prehistoric communities is the household. The household cluster is a group of features that is connected to one dwelling place. There are some prehistoric periods such as Baden Complex when the features that can be interpreted as houses are rare or unidentifiable. When traces of dwellings are lacking other settlement features and their archaeological materials provide the starting point for the analysis of the internal settlement structure. In such cases, the identification of household cluster is possible only on the basis of observed or statistically confirmed clusters of features, since pits are emblematic traces of dwelling areas, even if the remains of houses are not preserved. We also attempt to identify and describe the domestic areas in terms of meat consumption. The different phases of animal exploitation are reflected in the quality and the distribution of the bones. We should be able to trace these differences in the depositions of animal bones within each household cluster. In this paper we try to define the characteristic clustered distribution of household features and compare the results of the different statistical and methodological approaches in the Baden Complex through a case study of Balatonkeresztúr.

#### **G02.10: The recording of preventive archaeology data from rural test trenching by the French National Institute for Preventive Archaeological Research (INRAP – France) in the Rhône Alpes area: elements of archaeological metrology**

by *Bertrand Moulin* (Institut National de Recherches en Archéologie Préventive (INRAP), France), *Ellebre Segain* (Institut National de Recherches en Archéologie Préventive (INRAP), France), *Véronique Vachon* (Institut National de Recherches en Archéologie Préventive (INRAP), France)

In the particular framework of preventive archaeology in France, our aim is to evaluate archaeological potentials by carrying out systematic surveys on lands concerned by development projects. The results of these evaluations will allow the archaeological state departments to consider whether an exhaustive excavation should be carried out or not.

In this context, various internal reflections led us to (i) test theoretical sampling strategies to be set up on sites and to (ii) establish an experimental operating chain or protocol for archaeological data to be recorded by INRAP teams in Rhône-Alpes area.

This approach aims to record and archive data in consistent archaeological stratigraphic context, to be adapted at a regional scale through field dataset recording, later integrated into an archaeological database (BDA) using PC-tablet, and topographic – GIS measurements.

The exploratory potential of the GIS tool and its ability to produce various analytical maps in a same space are used to assess archaeological potential of fields and helps with site analysis.

This presentation exposes in detail the operational scheme from the test trenching strategy to the conception of the archaeological database up to the graphical restitution of the spatial information, as well as the type of tools used.

#### **G02.11: Diachronic Cultural Landscapes: Preliminary Results of the 2012 Field Season of the Norwegian Archaeological Survey in the Karystia (Euboea, Greece)**

by ***Renate Storli*** (*University of Hamburg, Germany*), ***Zarko Tankosic*** (*Indiana University, USA*)

In our paper we present the preliminary results of the first season of an archaeological survey project in southern Euboea (the Karystia, Greece). The project represents the continuation of efforts to survey the entire Karystia and provide a comprehensive analysis of long-term economic use and social structuring of Aegean landscapes. In 2012 we surveyed 473 ha of the survey area and located 22 concentrations of archaeological material (“findspots”) and a large number of isolated finds dated from the end of the Neolithic to the Roman times. In this paper we focus on prehistoric data from the survey. We combine new information with archaeological data collected in the area previously to demonstrate that it is possible to discern different kinds of contemporaneous landscape organization patterns in similar agriculturally oriented parts of southern Euboea during the Final Neolithic and the Early Bronze Age (c. 4500–3300 BCE). We argue that this evidence can be used to reconstruct the economic bases of landscape exploitation as well as to give us some tentative clues about the sociopolitical structure of the contemporary communities.

#### **G02.12: Originary links: biology and culture in the concept of care**

by ***Marina Picazo*** (*Universitat Pompeu i Fabra, Spain*)

In recent years several studies have been published about child care, from different disciplines, which have proposed the existence of a variety of models and which have significantly changed the biologicist notion of care, stemming especially from studies in the field of primatology and hunter-gatherer groups.

In this paper we intend to conduct a review on the conclusions that have been reached in these studies and their relevance to formulate a hypothesis about the existence of networks of activities and social practices that are inserted into (and build) places of care and of community cohesion and its implications for archaeological research.

#### **G02.13: Danube Valley in Copper Age: Peoples, space and resources**

by ***Dragomir Popović*** (*National History Museum of Romania, Romania*), ***Adrian Balasescu*** (*National History Museum of Romania, Romania*), ***Valentin Radu*** (*National History Museum of Romania, Romania*), ***Constantin Haita*** (*National History Museum of Romania, Romania*), ***Florin Vlad*** (*Ialomița County Museum, Romania*)

Considered like one of the most brilliant Copper Age cultural manifestations in South-East Europe, the complex Gumelnița-Kodjadermen-Karanovo VI, is documented on an impressive area. Based mainly on ceramic studies, the Romanians and Bulgarians scholars underlined the existence of few regional aspects, their evolution in space and in time being not equal.

In Northern part of its area (the Romanian territory), the pluridisciplinary archaeological researches during the last two decades offered important data which seem to individualize it. Thus, the site’s space structure and utilization, evidenced differences among some contemporary settlements. This situation is determined, most likely, among others, by the management of the resources and by the specific behaviors in the case of depositing different activities waste. This situation suggests the existence of some traditions, maybe different (?), which’s analyze is incipient and consequently unclear.

That is the situation of the tells from Hârșova (ConstanțaCounty) and Bordușani-Popină (IalomițaCounty), situated in the DanubeValley, in similar ecological contexts. The pluridisciplinary studies accomplished here offered a series of interesting data interpreted from paleoeconomical, seasonal and behavioral perspective of these communities which belong to the same culture, are quasi-contemporaneous and spatially close.

#### **G02.14: The Secluded Peninsula: The Search for a Regional Mortuary Tradition in the Cornish Iron Age**

by **Alexis Jordan** (*University of Wisconsin-Milwaukee, USA*)

In the southwest peninsula of Britain, the Iron Age peoples of Cornwall have long been considered an isolated regional tribal grouping based on antiquarian identifications of distinct, though culturally poor, ceramic traditions, massive souterrains, hillfort cliff castles, and a distinctive burial tradition, as well as Roman accounts of tribal divisions. Compared to other regions of southern Britain, however, the Cornish Iron Age is still not well understood and its distinct attributes and delimiting markers are more presumption than evidentiary fact. However, evidence for a more diverse set of mortuary practices has come to light in recent years. Currently there are approximately 220 burials from 40 cemeteries and isolated inhumations dating from the Pre-Roman Iron Age. These burials fall into one of two categories: stone-lined cists or unlined pits. In addition, the discovery of a cist grave on the Isles of Scilly containing a wealth of grave goods including the supposedly (opposite) gendered items of a sword and mirror hints at a more complex regional picture. Through a preliminary identification of the similarities and differences between the burial programs in mainland Cornwall and the Isles of Scilly, I will examine the evidence for a regional mortuary tradition in Iron Age Cornwall.

#### **G02.15: Dead or Alive: Burial customs of Neolithic Anatolia**

by **VeySEL Apaydin** (*Institute of Archaeology, University College London, UK*)

There has been huge amount of researches have been done about Neolithic burials in Turkey. However, the data of burials, from many Neolithic sites, were not interpreted by taking into account of social anthropological and ethnographic perspectives. Without doubt, the past or current societies cannot be considered as a single object. They all have their own dynamics in terms of their social structures, and all these dynamics have major impacts while societies were/are shaped. One of the main dynamics is, perhaps, death and treatment of the dead. Therefore, the focus of this study is based on the burial traditions of the Neolithic Anatolia and their major impacts on human society employed during a period in which human groups settled down in small villages where they began to treat their dead in a variety ways. This paper is presented in two parts. The first provides an introduction and brief background of the Neolithic sites, which have burials, in Turkey, and the second presents the social memory, identity, gender differences and status apart from grave goods, age profile, placement and distribution of the bodies in the sites.

#### **G02.16: Interpretations of numismatics in Illyrian cities: Considerations on constructs of Albanian archaeology**

by **Arba Bekteshi** (*University of Tirana, Albania*)

In this paper I concentrate on national and international archaeological interpretations, after 1944, on numismatics found in some of the Illyrian cities in Albania. This paper focuses on issues of interpretations during the communist regime, more specifically on adaptations of political agendas to prove the origin of Albanians. It concludes by placing interpretations of Illyrian numismatics onto the wider frame of a communist grand narrative. I argue that archaeology in Albania needs to get self-reflexive and turn its attention to international archeological theory to enrich its academic vigor. I focus primarily on Albanian and international literature published during the communist regime to make a point for an evaluation and assessment of interpretations consigning Albanian archaeology.

The main issue of this research, or the consideration of interpretations on Illyrian numismatics as a single subject, is also duly addressed in the paper. This paper builds on previous publications critical of Albanian archaeology by Richard Hodges, Mark Petruso, Sally Martin, Lorenc Bejko and others. Although, the paper aims at deconstructing ideological discourse in Albanian archaeology, it remains aware of the international colonizing rhetoric of archaeological interactions. I conclude this paper recognizing a paradigm shift in Albanian archaeology, though claiming it benefits from multivocality.

#### **G02.17: Founding Pompeii: Reassessing the Participating Cultures and Ethnicities**

by **Pavel Titz** (*Charles University in Prague, Czech Republic*)

The contribution aims to gather and analyze recent excavation results related to the first centuries of Pompeii (7th–5th century B.C.) and to describe this way the manifold cultural environment in the Campanian city.

Founded by the 7th century B.C. Pompeii had been developing for some seven centuries when being buried by the erupting Mount Vesuvius. When the city died in 79 AD it was no doubt a Roman city and this fact and the unique state of preservation usually prevails when considering the city's past.

Few ancient references together with recent archaeological discoveries from the early phases of the city reveal much different and more complex situation here. Both the geographical location of the seashore city and the fact that the Bay of Naples marks the northernmost part of *Magna Graecia* in Italy attribute to creation of very specific group of factors participating in the first stages if the city existence and development. Some may be ascribed to particular ethnics while others are better related to more widely defined cultures. Thus we meet here from the beginning various patterns belonging to Oscans, Greeks and Etruscans creating specific "Pompeian culture" in its broader meaning.

#### **G02.18: Virtual Viking Age in Vestfold: Using Social Media Technologies to re-create cultural heritage**

by **Anne Doksrød** (Midgard Historical Centre, Norway)

The centralization of archaeological artifacts and cultural heritage from local districts in Norway to national museums and collections, has always presented a conflict of interest. Artifacts are removed from their original place and placed in a central museum institution where they are to varying degrees displayed to the public.

This arrangement presents both opportunities and difficulties. While a concentrated collection of archaeological artifacts will secure better conservation and reach a broader audience, the local communities are robbed of the traces of their history as artifacts are removed from their original context and moved to central museum institutions. This situation creates a paradox: The national museums have the artifacts, but lack the context, while the local communities have the context, but lack the artifacts. This is especially true for the famous Viking ship burials at Oseberg, Gokstad and Borre in Vestfold.

How can digital technology help reduce this conflict of interest? Is it possible to bring the artifacts back to their original place, and create engaging and participating experience for the public *in situ*, using existing and future technical solutions?

#### **G02.19: Notes on the Coastal Archaeology – Examples from Szczecin Lagoon and Pomeranian Bay**

by **Marta Chmiel** (University of Szczecin, Poland), **Przemysław Krajewski** (University of Szczecin, Poland), **Michał Adamczyk** (University of Szczecin, Poland)

The Southern Coast of the Baltic is characterised by rapid changes, both in the past and present. One should notice the huge changes of the shoreline resulting from Holocene transgressions. Hence the so-called Archaeology of Submerged Landscapes has a primary importance for studies on the Stone Age. However, a considerable, yet underappreciated part is played by other processes as well, which have been in progress until today in coastal and shoreline zones. Significantly, they concern archaeological sites of all periods. Usually the methodology of Archaeology requires the registration of 'classical' post-depositional processes. Nevertheless, it is necessary to study the wider geographical context of archaeological sources and its changes running parallel to them. The needs and possibilities arising out of this proposal are discussed on the basis of the research on Archaeology of Submerged Landscapes of Szczecin Lagoon and Pomeranian Bay.

#### **G02.20: Gammel Strand, Copenhagen, growth and transformation from small port to the capitals harbour**

by **Stuart Whatley** (Copenhagen museum, Denmark)

The ongoing Metro Cityring excavations at Gammel Strand, Copenhagen, has brought traces of how the harbour of Copenhagen was used within the medieval and post medieval periods. The original name of Copenhagen as *Hafnæ* (harbour) indicates the original function of the settlement which later changed to *København* (merchants harbour) portraying the inhabitants and activity of the town. The aim of this talk is to discuss and try to reconstruct how the harbour area developed into the main port of the capital of Denmark in the 16<sup>th</sup> and late 17<sup>th</sup> century. This will be summarised from historical documents and the archaeological remains found at Gammel Strand. The ongoing excavations have revealed evidence of land reclamation, port expansion and construction of harbour facilities that have been preserved due to the anaerobic conditions of the soil. An interesting assemblage of finds have also been retrieved.

When the new ocean going vessels were too large to enter this harbour in the late 17<sup>th</sup> century, new harbour facilities were constructed elsewhere and the port changed from a primary port to a secondary redistribution port. This can be seen from new buildings constructed in the late 17<sup>th</sup> century and change in town planning.

## **G02.21: Recent Problems of Archaeological Heritage Management in the Czech Republic**

by **Michal Bureš** (*University of West Bohemia, Czech Republic*)

Czech archaeology operates under the Historical Heritage Protection Act coming from the year 1987. Since that time the act was several times successfully novelised, but there were even more unsuccessful attempts to change the law either partially or completely. The Paper is focused on real problems in Czech system of archaeological resource management, which led to attempts mentioned above, and put them in broader, mainly European, perspective.

## **G02.22: Current challenges in the protection of the historic environment in England**

by **Deborah Williams** (*English Heritage, UK*)

The current economic crisis has brought into sharp focus the perception that the designation of archaeology, buildings and landscapes is at odds with economic growth and development and has in part led to an anti-regulation stance in the UK government. Although the legal protection of the historic environment is seen by some as salvation, preventing unwelcome change in their local neighbourhood, more commonly it is seen as a blight which prevents initiatives aimed at reviving the English economy. Politicians, business leaders and the press highlight cases where decisions are seen to be standing in the way of 'progress' with headlines such as 'Salisbury Crematorium listed status blocks renovation' or 'Housing plan halted by review of scheduling'. Recent experience has shown that, with perceptions so divided, the approach which we take to the protection of sites must necessarily be mindful of the impact of the imposition of legal controls. Increasingly, we are exploring other mechanisms which allow the protection of archaeological importance, reserving legal protection only for the very best, whilst promoting the key message that protection of our most significant archaeological sites is not at odds with sustainable development. This paper will explore these tensions between growth and protection.

## **POSTERS**

### **G02.01-P-1: Archaeometric investigation of Celtic graphitic ceramics from Sopron-Krautacker (Hungary)**

by **Izabella Azbej-Havancsák** (*Hungarian Academy of Sciences, Hungary*), **Erzsébet Jerem** (*Hungarian Academy of Sciences, Hungary*), **Bernadett Bajnóczi** (*Hungarian Academy of Sciences, Hungary*), **Mária Tóth** (*Hungarian Academy of Sciences, Hungary*)

Graphite-tempered pottery was commonly used in the Iron Age. The question related to these ceramics is the origin of the graphitic temper added to the clay, as such graphitic ceramics are found not only in the close vicinity of the geological occurrences of graphitic rocks, but also on archaeological sites scattered all around Eastern and Central Europe, which suggests an extensive trade of graphitic ware or raw material. The current work includes petrographic and cathodoluminescence microscopy, electron microprobe and X-ray power diffraction (XRD) analyses of graphitic ceramics and rocks found at Sopron. Graphitic rocks with similar mineralogical composition and metamorphic grade like the graphitic clasts can be found in the Moldanubian zone of the Bohemian Massif. However, based on the XRD analysis jarosite can also be detected. Graphitic formations which contain jarosite accessory minerals are located in the Eastern Alps among others in the territory of Burgenland. Further analysis will refine the potential source region of the used graphitic rock.

### **G02.02-P-1: The concept of artefact purpose in Czech archaeological literature**

by **Lubos Chroustovský** (*University of West Bohemia in Pilsen, Czech Republic*)

This poster deals with the studies of artefact purpose in Czech archaeology. "Three main dimensions of purpose are considered – practical function, social meaning and symbolic significance as well as aspects of expression/style." Various definitions of purpose that have appeared in Czech archaeological literature since the 19<sup>th</sup> century are compared with this concept. The introduction of important original or borrowed ideas is traced, as well as the relation of these to archaeological paradigms, the frequency with which they have been applied and their lifespan. "Several types of publications were reviewed respective to the various target groups of readers (e.g. academic papers and monographs, syntheses on prehistory, popular books and textbooks)." Although many interpretations of function, meaning or significance of particular kinds of artefacts and contexts have appeared, no general model of artefact purpose was proposed until the 'processual' way of thinking was applied.

### **G02.03-P-1: GIS predictive modeling for the discovery of new Mesolithic sites in Central Portugal**

by Célia Gonçalves (Universidade do Algarve, Portugal), Nuno Bicho (Universidade do Algarve, Portugal), João Cascalheira (Universidade do Algarve, Portugal)

The inherent adaptive behavior of past hunter-gatherer societies is traditionally seen as a major advantage for the application of predictive models in the reconstruction of their settlement dynamics. The main argument for the success of this approach is the existence of constant variables that have likely limited land-use and site location to very specific areas in the landscape.

A GIS predictive model was created based on the analysis of a large set of these location parameters, that were relevant to the human occupation in the area between the Tagus and Sado watersheds during the Atlantic period (c. 7500–5000 BP). The main goal was to discover new archaeological sites in order to better understand settlement strategies during the Mesolithic of Central Portugal.

This poster will focus on the methodological aspects and problems of the application of predictive models to Mesolithic hunter-gatherers and, at the same time, it will present the final results and maps generated by the model.

### **G02.04-P-1: Archaeology of Přemyslid Bohemia**

by Jan Klápště (Charles University in Prague, Czech Republic), Tomáš Klír (Charles University in Prague, Czech Republic), Ivo Štefan (Charles University in Prague, Czech Republic)

The poster presents the research project “*Archaeology of Přemyslid Bohemia*”. The project bears on five issue chapters, which were determined on the basis of the current state analysis of the archaeological research in the Czech lands. The stated chapters are the following: I) *The structure of medieval rural settlement*, II) *Non-agrarian production in medieval rural environment*, III) *The internal structure of Early Medieval fortified areas of central places and its closest hinterland*, IV) *Settlement context of the rural Romance sacral architecture*, V) *The communication systems with the link to medieval centres*. The concept of those chapters indeed highlights the actual tendencies of the European Medieval Archaeology. The interest aims at important topics of the medieval history available for archaeological research. Though the project is closely linked to valuable results of the Czech Medieval Archaeology, each chapter features serious shortcomings which could be eliminated only by the program research, involving and verifying new method approaches. Each chapter brings in the overall balance of existing status of knowledge while offering the Czech archaeology with new solid argument items via all-embracing methodology research of case study sites and minor landscape units.

### **G02.05-P-1: Geoarchaeological Investigations around the gold mining district of Sotk, Armenia**

by René Kunze (Curt Engelhorn Centre for Archaeometry, Germany)

The Sotk region which is near the present gold works on the south eastern edge of the Lake Sevan (Armenia) is a part of southern Caucasia uniquely suited to demonstrate the intensive interchange between prehistoric settlement and gold mining. The enclosed landscape surrounding the Sotk pass can be seen as a prehistoric *terra incognita* due to the wholesale lack of archaeological and archeometallurgical investigations to date. The gold mines crucial importance is underlined not only because of its sheer size but also its position on the Sotk pass which is the direct connection between southern and eastern Caucasia and thus has a strategic importance for the entire region. Preliminary campaigns revealed outlines of the prehistoric settlement patterns which could be placed in relation to contemporary gold mining in a clearly delineated natural corridor along this superregional communication and trade route. We intend to implement an intensive holistic-archaeological investigation of the settlement network in the surroundings of the gold mine and an interdisciplinary attempt to imbed these structures in the larger ecological and anthropogenic environment.

### **G02.06-P-1: Recent Results of Aerial Archaeology in Flanders (Belgium)**

by Marc Lodewijckx (Leuven University (KU Leuven), Belgium), René Pelegrin (Leuven University (KU Leuven), Belgium), Tom Debruyne (Inter-Municipal Archaeological Service PORTIVA, Belgium)

For many years now, the Leuven University (KU Leuven) is carrying out traditional aerial archaeology. This has led to the discovery of many new archaeological sites, especially in the fertile loess belt in central Belgium. Aerial archaeology also proves to be very effective for the updating of inventories of archaeological sites, for the appraisal of the archaeological potential of wide areas, for the search of specific marks on previously detected sites and for the periodic assess-



ment of sites, monuments and historic landscapes. With our poster, we want to illustrate some of our more spectacular discoveries in the eastern parts of Flanders and especially the positive results of our cooperation with the Inter-Municipal Archaeological Service Portiva, which is active in a vast region in the heart of the Hesbaye loess area. Large scale agricultural activities in this highly fertile county cause vast erosion processes on tops and slopes in the undulating landscape and archaeological sites are in extreme danger of getting swiftly vanished. The enhanced exchange of information on archaeological sites between both our services has proved to be very fruitful and is an example of a more effective management of Belgium's archaeological heritage.

#### **G02.07-P-1: The Excavation of a Large Roman Settlement at Asse (Belgium)**

by **Kristine Maqerman** (*Leuven University (KU Leuven), Belgium*), **Marc Lodewijckx** (*Leuven University (KU Leuven), Belgium*)

The actual town of Asse is situated north of Brussels and appears to be built on top of a large Roman settlement. Due to the renewal of housing and industrial estates large patches of the Roman site could be explored. So far, the pavement of several sections of the internal roads and the remnants of 7 dwellings in stone or with stone foundations were uncovered. Other buildings, wooden constructions in particular, are less well preserved. Monumental buildings, like temples or bath houses, have not yet been identified but the number of figurines, mainly of horses, in a specific area seems to indicate that a temple precinct was located nearby.

Several pottery kilns and adjoining pits with a huge quantity of misfired pots comprise a period from the third quarter of the first century until the beginning of the third century. At least one of them was specialised in the production of small amphorae and dolia. In general, findings are abundant and demonstrate the wellbeing and prosperity of the population. The initiating and the final stages of the settlement are still unclear and hardly distinguishable in the huge amount of archaeological features on the site.

#### **G02.08-P-1: Warrior image in the second half of the third millennium B.C. – Artifact and spatial analysis of archery equipment in burial rites of the Bell Beaker culture in Bohemia and Moravia**

by **Jan Olivik** (*The University of West Bohemia, Czech Republic*)

Stone arrowheads and wrist-guards as parts of archery equipment represent highly distinctive types of artifacts of the Bell Beaker culture and have been attracting attention of scholars for more than 100 years. Relation between stone arrowheads and wrist-guards was studied by means of principal component analysis in persons buried with archery equipment. It revealed that in majority of graves with archery equipment stone arrowheads and wrist-guards exclude each other. This observation can be explained by existence of two/three different groups of 'warriors' with different expression of 'warrior image'.

Chi-square test was conducted in order to find out whether the existence of the two/three different groups of 'warriors' with different expression of 'warrior image' was determined by geographic space or not. In the other words if there exist differences in presence of these groups of 'warriors' between the regions of Bohemia and Moravia. The result of test showed that the existence of discussed groups of 'warriors' with different expression of 'warrior image' is not caused by spatial aspect of the Bell Beaker culture within regions of Bohemia and Moravia.

#### **G02.09-P-1: Technological approaches on chert stone tool production in the Mesolithic of Muge (Portuguese Estremadura)**

by **Eduardo Paixão** (*University of Algarve, Portugal*), **João Marreiros** (*University of Algarve, Portugal*), **João Cascalheira** (*University of Algarve, Portugal*), **Telmo Pereira** (*University of Algarve, Portugal*), **Juan F. Gibaja** (*CSIC Milà I Fontanals, Spain*), **Nuno Bicho** (*University of Algarve, Portugal*)

The discovery of the Muge shellmiddens date to back to the nineteenth century. Located near the Tagus River, in central Portugal, this complex has provided high quality Mesolithic sets of faunal remains, anthropological remains and lithics.

This study will focus on the presentation of technological analysis of chert artifacts, from the Layer 2 of Cabeço da Amoreira from the Muge Mesolithic complex. Chert has been extensively used in the production of tools, and this fact shows the high importance of this raw material in those communities. This study seeks to advance the knowledge on aspects such as economic, functional and stylistic elements, with the main objective of understanding the complexity of the Muge Mesolithic communities.

#### **G02.10-P-1: Archaeology Field School 2013 focused on medieval castles in Slovakia**

by **Noémi Pažinová** (Constantine the Philosopher University, Slovak Republic), **Ján Beljak** (Archaeological Institute of the Slovak Academy of Sciences, Slovak Republic)

The archaeology summer (field) school in Slovakia organized by Department of Archaeology Constantine the Philosopher University Nitra was launched in 2010 with great success. Its objective is to provide a range of quantitative and qualitative methods to enhance participants' research capabilities. The Field School aims at teaching and training in techniques of archaeological site excavation and non-invasive field archaeology, as well as finds documentation and forms of archaeological heritage presentation. The summer school offers the participation on an excavation, introduction in all working processes (incl. photography, drawing, measuring, writing diary). Beside that each year we offer an extensive programme with hands-on courses, lectures, exhibitions and excursions. The aim of the poster is to present a rich variety of events across a number of disciplines offered during the 2013 summer school focused on medieval castles, including methodological research on the National cultural monument Deserted castle – Lower castle in Zvolen, medieval castle Peťuša in Ostrá Lúka and National cultural monument Filákovo castle.

#### **G02.11-P-1: Similarities and differences in theoretical constructions of “New” processual and Soviet archeology**

by **Iia Shuteleva** (Bashkir State Pedagogical University named after M.Akmulla, Russian Federation), **Tatiana Leonova** (Bashkir State Pedagogical University named after M.Akmulla, Russian Federation)

Development of Soviet archeology and new “processual” archeology in the sphere of theoretical notions underwent similar stages. Some Russian and foreign scientists (E. A. Veselkin, 1997, L. B. Vishnytsky, 1992, V. F. Gening, 1989, N. V. Gogolina, 1997, Trigger B. G., 1989) distinguished similar tendencies. The impact of national archaeological science of middle 1920–1930 and processual archeology particularly are united by researchers in one general notion “socio-archeology” (V. I. Gulyaev, 1989). It should be noted that national socio-archeology and “new archeology” have similar theoretical and methodological approaches. Establishing of common sociological concept in Soviet archeology was a regular stage of development of scientific knowledge in the sphere of investigation of ancient cultures by means of archaeological sources. This concept integrated the most important achievements of not only Russian (argument of P. N. Tretyakov, adopted by G. Childe, went down in history as Deetz – Longacre argument (Kolesnikov, 1989, p. 5–9)) and first years of Soviet archeology, but also West European archeology of the end of XIX – beginning of XX cc. Peculiarity of Soviet “archeological idea” development is a particular part of unpublished documents that had great impact on establishing of archeology in USSR. The most prominent manuscripts became samizdat. Thus, in theoretical approaches of new and Soviet archeology there is sufficient number of common features that became apparent.

#### **G02.12-P-1: Minuscule Munch: The microscopic and macroscopic archaeological record of the excavation 2012/13 at the property Nedre Ramme, Vestby, Norway, owned by Edvard Munch 1910–44**

by **Vilde Vegem** (Akershus County Council, Norway), **B. Kjartan Fønstelién** (Akershus County Council, Norway)

The investigation exposed several thousand artefacts deposited during the period 1890 until 2013. Artefacts like paint tubes, brushes, bottles, kitchenware, alarm clocks, fishing reels, china, bikes and so on.

Microscopic photographic images of the paint from the paint tubes stomped by the world famous artist into the soil floor of his outdoor atelier and 3d photographs and microscopic photographs of thousands of other artefacts left at the property the last 150-years now constructs a vast artistic work documenting the scientific survey.

This documentation draws a continuum to the tradition of the artist documenting expeditions and scientific findings and participating in the scientific work through the artistic analysis and interpretation of the scientific material. The act of engaging a contemporary artist into this archaeological project generated more than a specific artistic documental work. Contemporary artistic interpretations and ideas addressed the excavation forth to the present and back to former times, and out of the realm occupied by the famous painter. During the archaeologic excavation the found artefacts was documented at the site, among these the artefacts and the garbage the archaeologists themselves had brought to the site, like cigarette buds, cups of coffee and other waste.

**G02.13-P-1: Rurallia. The Jean-Marie Pesez Conferences on Medieval Rural Archaeology.**

by **Haio Zimmermann** (Lower Saxony Institute for Historical Coastal Research, Germany), **Jan van Doesburg** (Rijksdienst voor het Cultureel Erfgoed, The Netherlands), **Eva Svensson** (Karlstad University, Sweden), **Jan Klápště** (Charles University in Prague, Czech Republic), **Jean-Michel Poisson** (Centre Interuniversitaire d'Histoire et d'Archéologie Médiévales, France)

The poster relates Rurallia, an international association for the archaeology of medieval settlement and rural life. It provides a colloquium of current problems in rural archaeology from most participating European countries to strengthen the exchange of knowledge in, and the development of, archaeologically comparable studies, and to make archaeological results available to other disciplines. The time-range of Rurallia covers the centuries before and after the Early and High Medieval periods as well, namely the period from ca. 500–1700 AD. The key activity of the RURALIA association is a conference held every two years in one of the participating countries.

## **Photographic Exhibition G03**

### **Hidden Worlds – a photographic exhibition**

**Thursday, 5 September 2013, 08:30–18:30**

**Poster Area 4 (Building 1, 1st floor)**

**Organisers:** **Lisa-Marie Shillito** (University of Edinburgh, UK) and **Julie Boreham** (Earthslides, UK)

This proposal is to hold a photographic exhibition, that we would like to have displayed over the whole conference if possible. Rather than posters or individual papers, this will be an exhibition that displays set of posters of high resolution digital photographic images, urging viewers to discover the hidden worlds of the microscopic archaeological record. The aim is to highlight the type of information that can be gained from this approach, and bring together a diverse set of case studies from Europe and beyond. This poster presentation takes the form of an art exhibition, complete with catalogue, that demonstrates the archaeological information that we can gather by viewing sediments under the microscope. We are showcasing a case study from Paisley Caves, Oregon, USA. Micromorphology of the sediments provides a history of the human use of the cave, and the formation processes of the archaeological record. Other examples include deposits from Catalhoyuk, Turkey, highlighting evidence that the inhabitants used external 'midden' areas for intensive activities in the later levels of the site. Depending on the space that could be allocated to such an exhibition, further contributions will be sought from colleagues in Spain, the Netherlands, Greece and the Czech Republic.

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García-Moreno Alejandro	A03.02	Gonçalves Alexandrino	B13.01
Garra Veronica	A01.01-P-3	Gonçalves Célia	G02.03-P-1
Garrido Pena Rafael	F03.01	González Álvarez David	A07.14, C09.03
Garstki Kevin	A05.02, A35.17, A38.05	Gonzalez Joseph	A35.19
Gattiglia Gabriele	B13.08	Gonzalez-Marcen Paloma	C06.01, D03.06
Gavláková Barbora	A15.01-P-4	Gonzalez-Perez Cesar	B13.16
Gavrilov Konstantin	A26.01-P-4	Goren Arian	B13.03
Gearey Ben	F07.07	Gorgues Alexis	A28.07, A38.02, A46.15
Geisler Hans	A31.09	Goriunova Olga	A11.11
Gelabert Oliver Maria	A07.02-P-1	Gosden Chris	A15.06
Gelé Agnès	E03.06	Goude Gwenaëlle	E01.04-P-4, E01.06
Gerasimov Dmitry	A27.02	Gradistanac Juhani	A35.22
Gerlach Renate	A42.07, F06.04	Gradoli Maria Giuseppina	A46.16, C04.03
Ghenghea Alexandra	A22.02-P-2, C10.03	Grahn-Danielson Benjamin	B06.01-P-2, B06.05
Gheorghiu Dragoş	A03.18, D02.01-P-3, D02.02	Gramsch Alexander	A13.19, A44.01
Ghisleni Lara	A35.05	Grandin Lena	F05.09, F08.10
Giacomello Federico	A07.01-P-1	Grane Thomas	A30.08
Giardino Claudio	F05.02	Gratuze Bernard	A28.05
Gibaja Juan F.	A19.03, A25.02, A25.02-P-1, A25.06-P-1, A28.02, G02.09-P-1	Gregor Miloš	A46.18
Giligny Francois	B09.02	Gren Leif	B06.03
		Grenda Donn	A21.09, B07.11, B14.03
		Gresak Vaclav	A41.10
		Gresz Agnes	C02.02

Griffiths Jillian	B13.14	Harbeck Michaela	F03.09
Griffiths Seren	F07.07	Hardman Catherine	B13.15
Grima Reuben	D04.09	Hardy Karen	E04.07, E06.07
Grimaldi Stefano	A25.03	Harris Susanna	A18.01
Grīžas Gytis	B02.03-P-1	Hasanov Zaur	A03.15
Gronenborn Detlef	A44.02, E05.03	Hatzer-Grubwieser Petra	F04.02
Grootes Pieter M.	E01.07, F03.07, F07.04-P-1	Haug Anne	A43.02
Grupe Gisela	F03.09	Hauschild Maya	F03.13
Gruzdź Witold	A25.03-P-1	Hauzeur Anne	A36.01
Grygiel Ryszard	E01.12	Haws Jonathan	A12.03, A12.04
Gualandi Maria Letizia	B13.08	Hayden William	A40.01
Guengerich Anna	A35.15	Hedeager Lotte	A03.12
Guglielmino Riccardo	A01.01-P-3	Hegardt Johan	C03.07
Guillon Mark	A39.11, G01.15	Heilen Michael	B07.11, B14.03
Guinan Loreto	D04.06-P-1	Heinemeier Jan	F07.02-P-1
Gulyás Gyöngyi	A22.09	Hejzman Michal	A34.04-P-1, B02.07
Gulyás Sándor	F02.01-P-3	Hejhal Petr	A04.04, A41.09
Gurova Maria	A25.01	Heldal Tom	F08.01-P-1
Gustavsen Cecilia	G02.08	Henry-Gambier Dominique	A26.10
Gutiérrez Cuenca Enrique	A43.03	Henson Donald	B08.04
Gutiérrez Rodríguez Mario	A40.01-P-2	Hermon Sorin	B13.13
Gutsmiedl-Schuemann Doris	A09.07	Herold Hajnalka	A16.01
Gutteridge Adam	D04.01	Herremans Davy	E02.02-P-1, E06.01-P-1, E06.14
Guttormsen Torgrim Sneve	C03.03	Herries Andy	F02.01, F02.06
Gyucha Attila	A22.09	Herrscher Estelle	E01.08
Haack Fabian	A13.16, A36.14	Hertell Esa	A27.05
Haak Arvi	A17.07	Herva Vesa-Pekka	A04.15, B05.04
Haak Wolfgang	F01.01, F03.02, F04.03	Hesjedal Anders	A10.01
Haarby Hansen Camilla	A17.02	Hiebel Gerald	A40.05
Haggren Georg	A04.10, E03.05	Hierro Gárate José Ángel	A43.03
Haită Constantin	B10.01, G02.13	Higginbottom Gail	A07.02, C07.05
Hajnalová Mária	A14.05	Higgins Valerie	B08.02, D03.01
Halbrucker Éva	G01.04	Higuchi Hiroyoshi	A11.12
Halkon Peter	F05.01	Hingley Richard	B09.03, C10.08
Hall Mark	A08.02, B13.14, D02.10	Hinz Martin	F07.04
Hancock Yvette	E06.07	Hipólito-Correia Virgilio	B13.01
Hanks Bryan	A20.04, C05.01, C05.10, C05.11, C05.12	Hjārthner-Holder Eva	F08.11
Hänni Catherine	F02.03	Hjoerungdal Tove	C03.01
Hansen Gitte	F08.01-P-1	Hladíková Katarína	A09.14, A32.12, A34.09
Hansen Jesper	C10.11	Hlásek Daniel	A23.01-P-2
Hansson Martin	A07.12	Hlavacek Petr	A41.10
Hanus Kasper	E06.01	Hlavatá Jana	F07.01-P-1
		Hoebreckx Maxim	C02.14

Hofman Corinne	A21.08	Jakucs János	F01.02, F01.03, F01.04, F01.05
Hofmann Daniela	A36.09		
Hofmann Kerstin P.	A07.06	Janeš Andrej	C09.01-P-4
Högberg Anders	B09.07, F08.01	Janik Liliana	A35.07, E04.03
Hohle Isabel	A44.04-P-2, A44.09	Jankowiak Marek	A16.07
Holata Lukáš	A04.06, B10.09	Jansen Øystein J.	F08.01-P-1
Holt Emily	C04.04	Jantzen Detlef	E01.07
Holubar Karl	F04.02	Janusek John	A35.02
Holyoak Vincent	B12.01	Jaouen Klervia	E01.04
Hommel Peter	C05.12	Jasinski Marek E.	B05.08
Hoogland Menno	A21.08	Jatautis Šarūnas	A09.01-P-1
Hoover Kara	A11.08	Jaworska Joanna	E05.10
Hoppe Thomas	A28.05	Jay M.	F03.08
Horák Jan	F06.01-P-2	Jègues-Wolkiewiez Chantal	A03.01
Horn Christian	F08.06	Jelínek Pavol	F07.01-P-1
Hornik Pavel	A28.02-P-3, F04.01-P-4	Jennings Ben	A13.12, A22.01
Høst-Madsen Lene	A09.01, A17.03	Jensen Bo	A19.10
Hrnčířik Pavel	A04.03, A04.09	Jensen Xenia Pauli	A30.02
Huber Gabriela	F04.02	Jerem Erzsébet	G02.01-P-1
Hudson Mark	A11.08	Jerpåsen Gro B.	A05.07
Hue-Arcé Christine	A19.07	Jeunesse Christian	A13.16
Hughes Erica	C02.06	Jevtić Miloš	A20.08
Hughes Richard	F08.01	John Jan	B02.07, B02.11
Hukantaival Sonja	C02.09	Johnson James	A35.23, C05.04
Hunt Mark	F08.04-P-1	Jonaitis Rytis	A09.01-P-1
Huseby Hanne	B06.02-P-2	Jonášová Šárka	E03.04
Hüssen Claus-Michael	A30.05	Jones Cara	D04.08
Hvaas Steen	A29.01	Jones Martin K.	E01.02
Iamandi Daniela	A26.11	Jones Richard	F08.04
Ignat Theodor	A06.01-P-3, A46.03-P-1	Joosten Ineke	F05.06
Ihr Anna	E03.08	Jordan Alexis	G02.14
Ilic Olivera	A41.08	Jordan Peter	A11.01
Iliev Ilia	F02.01, F02.06	Jouttijärvi Arne	F05.08
Imecs Zoltán	A23.07	Jovanovic Jelena	F07.09
Ion Alexandra	C08.03	Kabaciński Jacek	F08.06-P-1
Ivanischeva Marina	A01.03	Kacki Sacha	A33.05
Ivanova Mariya	A35.11	Kalafatić Hrvoje	A23.21
Ivanova Svetlana	A34.06	Kaland Sigrid	F08.01-P-1
Ivleva Tatiana	A13.03-P-1, C10.07	Kalicki Piotr	C07.04, F06.03
Iwaniszewski Stanislaw	A03.17	Kalicki Tomasz	F06.03, F06.05
Jaeger Mateusz	A01.09, A23.01, A23.03, A23.14, B02.10	Kallio-Seppä Titta	E03.07
Jakobsson Mattias	F04.04	Kaner Simon	A11.14
		Kanstrup Maria	F07.02-P-1
		Karagianni Alexandra	A09.08

Karavanić Ivor	A12.01	Kočár Petr	A04.06, A14.05, E06.03, E06.15
Karavanić Snježana	E06.04-P-1	Koehler Alain	B11.01
Karczewska Małgorzata	A21.05, A46.22	Kogalniceanu Raluca	A07.03-P-1
Karczewski Maciej	A21.05	Köhler Kitti	F01.08
Karimnia Sarah	F03.12	Kohlmeyer Kay	B03.01
Karl Raimund	B13.05, C08.02, C10.02	Kohring Sheila	A19.02, A39.01
Karo Špela	A23.20, A41.06	Koike Hiroko	A11.12
Kars Henk	G01.05-P-1	Koivisto Leena	D04.04-P-1
Karul Necmi	A46.05	Koivisto Satu	B02.01, B02.05
Karwowski Maciej	A14.04	Kolář Jan	A35.01-P-2, B02.02-P-1
Kasse Kees	F02.04	Kolen Jan	A27.03
Kasztovszky Zsolt	F08.06-P-1	Kolishtkroska Nasteva Irena	A13.04-P-1
Katsaros Alexios	B06.09	Komoróczy Balázs	A30.07
Kaupová Sylva	E01.08	Komšo Darko	B08.06
Kawashima Takamune	E05.01	Končelová Markéta	A44.08
Keefe K.	F03.08	Königsmann Christina	C05.13
Keerl Victoria	F01.04	Konoplyova Ksenya	G01.07
Kels Holger	F06.04	Koon Hannah	E01.17
Kerdivel Gwenolé	A29.06	Kopackova Jana	E06.05-P-1
Kerig Tim	F07.02	Koryakova Ludmila	C05.16
Kershaw Rachael	A38.07	Koscelník Petr	A04.02-P-3
Kerscher Hermann	B02.08	Kotsakis Kostas	A46.03
Kholkina Margarita	G01.02-P-1	Kovacik Peter	E06.06
Khomiakova Olga	A28.01-P-3	Kovács Árpád	A22.09
Kienlin Tobias	A23.05	Kovačiková Lenka	A44.06-P-2, E06.15
Kim Jongll	A09.16	Kowalski Łukasz	G01.03-P-1
Kiosak Dmytro	A37.04	Kradin Nikolay	C05.02
Kiss Attila P.	C02.10	Kraeva Ludmila	C05.01-P-4
Kiss Viktória	A23.01, A23.13	Krajewski Przemysław	F06.02-P-2, G02.19
Kittel Piotr	F06.03	Král Vlastimil	G01.04-P-1
Klápště Jan	G02.04-P-1, G02.13-P-1	Krauliz Alf	A43.06
Kleshchenko Ekaterina	A34.03-P-1	Krause Rudiger	C05.16
Klír Tomáš	C09.04, G02.04-P-1	Krauß Raiko	A28.01
Klontza-Jaklova Vera	A16.17, C04.05	Kreiter Attila	A46.19
Klontzas Manolis	C04.05	Krekovič Eduard	A30.06
Kluiving Sjoerd	A27.03, F02.04, F02.08	Kremer Christoph	A18.05
Krneťová Petra	A22.08, A32.12, A34.09, F07.03-P-1	Kretschmer Saskia	B11.02
Knápek Aleš	A04.04	Kriiska Aivar	A27.02
Kneisel Jutta	A01.15, A06.12	Krišťuf Petr	A34.01, A34.04-P-1
Knific Timotej	A41.06	Krišťufová Tereza	A34.01
Knipper Corina	F03.11, F03.12, F03.13	Krueger Michal	A34.05-P-1
Koch Julia Katharina	C06.03	Křivánek Roman	A20.06
Kocic Miroslav	A19.01, C05.06	Kuchařová Hedvika	A39.09

Kučová Stanislava	A30.15	Lefranc Philippe	E01.04-P-4
Kudelić Andreja	E06.04-P-1	Legarra Herrero Borja	A29.12
Kühn Marlu	F03.11	Leis Marilena	A01.14
Kulcsár Gabriella	A23.01, A23.03	Leleković Tino	A33.10
Kuna Martin	B04.04, C01.11	Lengyel György	A26.04
Kuncevičius Albinas	B08.05	Leonard Katherine	A13.14
Kunst Guenther Karl	E02.08	Leonova Tatiana	G02.11-P-1
Kunze René	G02.05-P-1	Lepère Cédric	A46.11
Kurila Laurynas	A34.06-P-1	Leroyer Chantal	A31.04
Kustár Rozália	F02.01-P-3	Leroyer Mathieu	A09.20
Kuzmanovic Maja	B08.06	Leslie Alan	B06.07
Kužir Snježana	A02.06	Leusch Verena	A28.01, A28.05, F08.05
Květnina Petr	A44.08	Lev Sergey	A26.12
Kvítková Dana	F04.01-P-4	Licerias Garrido Raquel	A05.03-P-1, A05.06, A40.01-P-2
Kylli Ritva	E03.07, E06.13	Lidström Holmberg Cecilia	C06.02
Kysela Jan	A22.07	Liebermann Carmen	B11.02
La Monica Denise	G02.23	Lightfoot Emma	E01.02
Laforest Caroline	A40.03	Linderholm Anna	F01.01-P-3, G01.03
Lagerås Per	C04.08	Lindstrøm Torill Christine	C07.02
Lagerstedt John	A10.03	Ling Johan	F08.10
Lahtinen Maria	E01.05	Link Thomas	A44.03
Laloo Pieter	B13.06	Linton Jimmy	A25.05
Lambers Karsten	B10.03	Liu Li	A11.10
Langlitz Meredith	D04.05-P-1, G02.06	Liu Xinyi	E01.02
Laporte Luc	A29.06, A46.10	Liveri Angeliki	A02.09
Lardeaux Jean-Marc	A46.06	Locatelli Daniela	A34.10
Larionova Yulia	F03.10	Lockhoff Nicole	F08.05
Larsen Jan Henning	F05.10	Lodewijckx Marc	A45.02, G02.06-P-1, G02.07-P-1
Larson Greger	F01.01-P-3, G01.03	Logan Melissa	E06.06
Laszlovszky József	F09.01	Login Emma	B05.07
Laulumaa Vesa	B02.01, B02.05	Lohr Christian	A44.02
Laurelut Christophe	B11.03	Loken Pia Skipper	B06.02-P-2
Laužikas Rimvydas	B08.05	Lolić Tanja	B01.04
Lavento Mika	A38.11	Longford Catherine	F02.01, F02.06
Lazár Cătălin	A06.01-P-3, A09.07-P-1, A13.05-P-1, A13.07-P-1, A32.04, A46.03-P-1	Lopatin Nikolay	A16.08
Lazarovici Cornelia-Magda	A13.06-P-1, A32.03	López Elisabet	A05.01
Lazarovici Gheorghe	A32.03, E05.05	Lopez-Romero Elias	A29.06
Le Roy Melie	A09.17, F04.05	Lorentzon Moa	B02.09
Leckman Phillip	A40.01	Lorenzon Marta	B03.04
Leduc Charlotte	A02.03	Lorho Thierry	A31.04
Lee-Thorp Julia	E01.09	Losey Robert	A02.05, A11.11, A11.15, A11.16
Leech Steven	A10.09		

Løvschal Mette	C07.03	Marín-Aguilera Beatriz	A38.01
Loze Ilze Biruta	A03.13	Marinval Philippe	E02.06
Loznjak Dizdar Daria	A23.17	Markham Mik	F08.02
Lozovskaya Olga	A02.04, E04.02	Marková Klára	A01.08
Lozovski Vladimir	A02.04, A25.04	Márkus Gábor	A23.06
Ložnjak Dizdar Daria	A28.04	Marreiros João	A12.06, A12.07, A26.05, G02.09-P-1
Luca Monica	F01.01-P-3, G01.03	Marta Liviu	A23.02-P-2, A23.05
Lucas Malin	A34.11	Martínez Camps Carmen	A33.11
Lucas Robin	A34.11	Martínez del Pozo José Ángel	A05.03-P-1
Lucretiu Birliba	A33.09	Martín-Rodilla Patricia	B13.16
Lunkov Vladimir	C05.01-P-4	Marton Tibor	F01.02
Lutz Alexander	A04.12	Marzoli Dirce	F05.03
Lychagina Evgeniia	A25.04-P-1, F06.03-P-2	Mařík Jan	A16.05, A41.09
Lyne Ed	A17.02	Masclans Alba	A25.06-P-1
MacGregor Gavin	B06.01	Masojć Mirosław	A24.08
Macháček Jiří	A16.03	Mason Philip	A38.03, D02.02-P-3
Machová Barbora	B02.02-P-1	Matau Florica	A13.08-P-1, A35.10
Mackie Catriona	A07.15	Matczak Magdalena	A39.06
MacNeil Gregory	B01.07	Matějková Kristýna	A17.06
Magerman Kristine	G02.07-P-1	Mater Gizem	C03.03-P-1
Magnusson Gert	F05.02-P-2	Matias Jo Zalea	C06.06
Măgureanu Andrei	A16.15, A31.11	Matiášek Josef	A16.13
Majewski Teresita	B07.11, B14.03	Matić Uroš	A19.05
Makowiecka Marzena	A21.06	Matoušek Václav	A04.02, A04.03
Makowiecki Daniel	A21.01-P-3, A21.06	Matsuda Akira	D04.03
Malina Ondrej	B10.08	Mauri Marco	F05.06
Malrain François	A31.04	Mavrović Mocos Janja	A20.02-P-3
Maltby Mark	A21.03	Maximiano Castillejo Alfredo	A05.03-P-1, B10.06
Malve Martin	A21.02	May Keith	A40.04, B13.11
Măndescu Dragoş	A22.02, E03.01-P-3	Mayoral Herrera Victorino	A15.04
Mangado Llach Xavier	F08.05-P-1	Mazáčková Jana	A04.04
Mangel Tomáš	A31.06	Mazet Sylvain	B11.05
Manko Valery	A25.05-P-1	Mazurkevich Andrey	A46.09, E04.05
Manne Tiina	A12.07	Mazuy Arnaud	E01.13
Manning Katie	F07.02	Mazzucco Niccolò	A25.02, A25.02-P-1
Maquet Arlette	A41.05	Mbeki Linda	G01.05-P-1
Marçais Anne-Sophie	A09.18	McClatchie Meriel	F07.06
Marcigny Cyril	A42.04, B11.05	McClenaghan Richard	B03.07
Marciniak Arkadiusz	C01.07, E05.10	McDonnell Gerry	F05.04
Mareković Sara	E06.04-P-1	McLaughlin Rowan	F07.06
Märgärit Monica	A13.07-P-1, A35.02-P-2	McOmish David	B06.12
Marikova-Kubkova Jana	A41.02	Meadows John	A32.02, F07.03, F07.04-P-1
Marin Dioscorides	A28.02		



Mecking Oliver	A44.04-P-2	Mitina Maria	A06.07
Medarić Igor	A20.02-P-3, A20.03	Mittnik Alissa	F04.07
Mederos Alfredo	F08.02-P-1	Mizoguchi Koji	C01.02
Mehler Natascha	A04.01	Mlekuz Dimitrij	A05.04, A35.08
Meier Thomas	C08.01, C10.09	Mocci Florence	A15.05
Melcher Frank	F08.05	Moelders Doreen	A31.05
Mele Marko	D02.05	Moeller Katharina	B07.01
Meller Harald	F01.01, F03.02	Moggi-Cecchi Jacopo	E01.06
Mellnerová Šuteková Jana	A32.12, F07.02-P-1	Mol Angus	A21.08
Melton N. D.	F03.08	Mol Kati	F05.06
Melvold Stine	A27.04	Moldoveanu Katia	A32.04, A35.02-P-2
Menchelli Simonetta	A15.03	Molchanov Ivan	C05.14
Mende Balázs	F01.08	Møller Niels Algreen	A38.08
Mendisco Fanny	F04.05	Molloy Barry	A13.09-P-1, F08.08
Méniel Patrice	A31.04	Molnar Zsolt	A23.07
Menšík Petr	A23.01-P-2, G01.04-P-1	Monah Dan	A02.07
Mester Zsolt	A24.07, A25.06	Mondal Munmun	G01.16
Meulebroeck Wendy	A13.14-P-1	Montanaro Andrea Celestino	A01.16
Meyer Christian	A19.09, F03.12	Monteiro Patrícia	E04.01
Meylemans Erwin	A27.01	Montero Ignacio	F08.04-P-1
Michalak Katarzyna	A07.04-P-1	Montgomery Janet	F03.06, F03.08
Michálek Jan	B02.11	Mooney Scott	F02.01, F02.06
Michalík Tomáš	A26.02, B04.07	Moore Sophie	A35.14
Michelevičius Dainius	B10.03-P-3	Moreau Anne	B11.08
Michl Eike Henning	A04.07	Moreno Gallo Miguel Ángel	A05.03-P-1
Michler Matthieu	A42.03	Moreno Megias Violeta	G01.09
Mihai Wittenberger	A38.01-P-3	Mori Matjaž	A20.03
Mihajlović Vladimir	C03.05, C10.06	Morteanu Roxana	A45.03
Mihelić Sanjin	A23.17, A28.04	Motuzaitė Matuzeviciute Giedre	E01.02
Mikešová Veronika	B13.02	Moulin Bertrand	B11.08, G02.10
Mikishin Yuri	A11.04	Moya Andreu	A28.02
Milcent Pierre-Yves	A28.05, A28.06	Mudra Petr	G01.06-P-1
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Milítký Jiří	A14.03	Müller-Scheessel Nils	A25.07, A34.04
Miller Bonney Emily	A35.09	Mullins Paul R.	E03.07
Miloglav Ina	B01.04	Murashkin Anton	A25.07-P-1, A46.04-P-1
Milosavljević Monika	C10.05	Murătoreanu George	A05.04-P-1
Minni Delphine	A42.03	Muriel Fily	A13.10-P-1
Mirea Pavel	A32.04, A35.02-P-2	Muriel Mélin	A13.10-P-1
Mischka Carsten	A37.05	Murillo Mercedes	F08.04-P-1
Miscicki Wawrzyniec	A45.05, G01.08	Murko Miha	A23.03-P-2
Misterek Kathrin	A04.12	Murphy Celine	A13.02
Mitchell Janis	C06.05	Murray Matthew	A05.02, A35.20

Musil Jiří	A30.14	Novenko Elena	F02.05
Musteata Sergiu	B04.06, E02.01-P-1	Novšak Matjaž	A33.01-P-3
Mustonen Riikka	B02.02	Nutu George	A21.02-P-3
Mušič Branko	A20.03, A20.07	Nyerges Éva Ágnes	F01.02, F01.07
Mytum Harold	B05.01	Nys Karin	A13.14-P-1
Nácarová Jana	A28.02-P-3	O Maolduin Ros	A13.11-P-1, A46.05-P-1
Nacev Trajce	A32.01	Ó Riagáin Russell	C09.07
Nadeau Marie-Josée	E01.07, F03.07, F07.04-P-1	O'Dell Emily	B03.05
Nagy József-Gábor	A23.07	O'Carroll Finola	D04.06-P-1
Naranjo Mena Jairo	A40.01-P-2	Odgaard Ulla	A03.11
Nash George	A03.10	Oetelaar Gerald	C04.01
Naum Magdalena	C09.06	Ogunfolakan B. Adisa	B03.06
Naumov Goce	A06.05	Ogus Esen	A33.02
Nedomolkina Nadezhda	A01.02	Okupniak Monika	G01.05
Nehlich Olaf	E01.07	Ólafsson Guðmundur	A43.01
Neruda Petr	A24.01	Olausson Deborah	F08.01
Nespoulet Roland	A26.10	Olivier Adrian	B04.01
Netolický Petr	A23.01-P-2	Olivik Jan	G02.08-P-1
Neumannova Klara	G01.07-P-1	Olli Maarja	G01.12
Newell Jenny	B05.01-P-3	Ollivier Morgane	F02.03
Newhard James	A15.07	Onishi Hideyuki	A11.08
Newton J.	F03.04	Ontañón Peredo Roberto	A43.03
Ng Chuenyan	C05.08	Opatrná Marie	B13.02
Ng Laura	B05.06	Opriş Vasile	A06.01-P-3, A46.03-P-1
Nicolucci Franco	B13.09, B13.13	Oross Krisztián	F01.02
Nicodemus Amy	F02.07	Ortega David	A28.02
Nicolaescu Monica	A45.03	Ortiz Nieto-Márquez Irene	A24.06
Nicolis Franco	C01.06	Ortman Oscar	C03.10
Niebieszczański Jakub	A23.15, B02.10, B10.02-P-3	Orzylowska Katarzyna	A09.19
Niederstätter Harald	F04.02	Os Kristin	A31.01-P-2
Niederwieser Daniela	F04.02	O'Shea John	A23.08
Nikitin Alexey	A34.06	Ossowski Andrzej	B05.09
Nikitovic Dejana	A39.13	Osztás Anett	F01.02, F01.06
Niţu Elena-Cristina	A24.05, A26.11	Ouzoulias Pierre	E06.10
Nomokonova Tatiana	A02.05, A11.15, A11.16	Özdoğan Mehmet	A06.11
Nordin Jonas	A04.14	Pacák Marek	A28.02-P-3, F04.01-P-4
Norris Stephan	A40.01	Paclíková Klára	B06.03-P-2
Novák David	G01.17	Păduraru Marius	E03.01-P-3
Novak Dora	E02.03-P-1	Pagnoux Clémence	E06.10
Novak Mario	A19.12	Paixão Eduardo	G02.09-P-1
Novák Miroslav	A28.02-P-3	Pál Raczky	A32.07
Novakovic Predrag	C10.01	Palavestra Aleksandar	C10.04
		Palomo Antoni	A25.02-P-1, A25.06-P-1, A28.02, E01.14, E04.04

Pánczél Péter	A46.19	Petitdidier Marie-Pierre	B11.03
Panteleeva Sofya	C05.13	Petr Libor	A04.06
Papoli Yazdi Leila	A10.10	Petrík Jan	B02.02-P-1
Papoulias Evangelos	B04.03	Pettersson Claes B.	A04.13
Pappa Maria	B10.02-P-3	Pettinelli Elena	B08.03, B10.02
Parditka Györgyi	A23.10	Piatničková Kristína	A32.12, F07.03-P-1
Parga-Dans Eva	B07.02	Piazzì Claudia	A22.05
Paris Pierre-Emmanuel	E06.09	Picazo Marina	C06.01, G02.12
Parri Alice	G02.23	Pichler Sandra	F03.11
Parson Walther	F04.01, F04.02	Pieniążek Magda	A01.12
Pasarić Maja	C02.07	Pieta Karol	A16.12
Pasquinnucci Marinella	A15.03	Pike Alistair	A12.08
Pásztókai-Szeőke Judit	A18.01-P-4, A18.08, A31.10	Pilavci Turkan	A06.15
Paterlini Anna	D04.07-P-1	Piličiauskienė Giedrė	E02.09
Pavelka Jaroslav	E01.05-P-4	Pingi Paolo	G02.23
Pavlacký Matěj	A13.09-P-1	Pintaric Kocuvan Vesna	G01.20
Pavlova Nina	A18.09	Pintér Ildikó	D02.02-P-3
Pavlů Ivan	A06.04	Pintucci Alessandro	B07.07
Pavúk Peter	A46.18	Pioffet Hélène	A46.10
Pawleta Michał	D01.03	Pionnier-Capitan Maud	F02.03
Pawlikowski Maciej	F02.02-P-3	Piqué Raquel	A19.03, E01.14, E04.04
Pažinová Noémi	B12.03, G02.10-P-1	Pişkin Evangelia	A17.09, E02.07
Pearce Mark	A45.01	Pitman Derek	C05.10, C05.11, C05.12
Pedroni Luigi	A33.04	Pizziole Giovanna	A27.06
Pedrotti Annaluisa	A25.03	Pížová Kristýna	F04.01-P-4
Pelegrin René	G02.06-P-1	Pleska Miroslav	A28.02-P-3, F04.01-P-4
Pelisiak Andrzej	A37.01, A37.08	Pluskowski Aleksander	A21.01-P-3, A21.03, A21.05, A21.06
Pellacani Gianluca	A13.01-P-1	Plzak Jindrich	B10.09
Pemonge Marie-Helene	F04.05	Podgorná Eliška	F04.08
Penezić Kristina	E06.02	Poisson Jean-Michel	G02.13-P-1
Penkman K. E. H.	F03.04	Polak Zbigniew	A16.16
Pereira Telmo	A12.03, A12.07, G02.09-P-1	Polanská Michaela	A02.02
Peretto Carlo	A32.01	Polansky Lubos	A41.02
Perić Peručić Jozo	A39.02-P-2	Polányi Tamás	A23.01, A23.11, C02.04
Pernicka Ernst	A28.01, A28.05, F08.05, F08.07	Połczyński Łukasz	A07.04-P-1
Perschke Reena	D01.02	Polgár Péter	A18.01-P-4
Persson Per	A27.04, F07.05-P-1	Poli Vanessa	A13.01-P-1
Peša Vladimír	A03.06, A44.05-P-2	Pollard Tony	B05.03
Peška Jaroslav	A34.04-P-1	Poloni Estella Ermione Simonetta	F04.08
Petersen Nora	A22.06	Poništiak Štefan	E06.03
Petersen Troels	A05.07	Pons Marie-Laure	E01.04
		Popa Alexandru	A30.11

Popelka Miroslav	A44.12	Rasmussen Marianne	A34.03
Popov Aleksandr	A11.04	Rassmann Knut	A37.05
Popovici Dragomir	E01.03-P-4, G02.13	Rauba-Bukowska Anna	A37.09
Porcic Marko	F07.09	Rebay-Salisbury Katharina	A06.13
Pospieszny Łukasz	A23.01, A23.15, B02.10	Recchia-Quiniou Johanna	A06.09
Posselt Martin	A37.01	Rechkalova Vlada	A02.08
Potrebica Hrvoje	A20.07, A34.02	Reddy Seetha	A21.09
Pouilloux Laurent	E01.04	Regert Martine	E01.13
Preda Bianca	A05.04-P-1	Reichenbach Karin	A07.11, C08.01
Preiss Sidonie	E02.02-P-1, E06.01-P-1, E06.14	Reinfjord Kristian	A07.09
Premuzic Zrinka	A09.03-P-1, A39.13	Reitan Gaute	A27.04
Prescott Christopher	B09.08	Reiter Samantha	A18.04
Preusz Michal	A04.02-P-3, A04.05, B06.03-P-2, E06.15	Reményi László	A23.04
Price T. Douglas	F03.14	Renzi Martina	F05.03, F08.04-P-1
Prilaux Gilles	E05.08	Reshetova Irina	A39.03-P-2, G01.10-P-1
Prisecaru Dănuț	A45.04, G01.08-P-1	Réveillas Hélène	A33.05, A39.08, E01.04-P-4
Priskin Annamária	A23.02, A23.18	Rey Solé Mar	F08.05-P-1
Profantová Naďa	A16.04	Richards Julian	B13.09, B13.15
Prokopiou Elena	B07.08	Richards Stephen	F04.03
Protze Jens	F06.04	Richardson Lorna	D03.10
Przybył Agnieszka	B10.07	Richardson Phil	D04.08
Przybyła Marcin M.	A25.03-P-1	Richley Elizabeth	A20.09
Pták Martin	B06.03-P-2	Riede Felix	C04.01
Puseman Kathryn	E06.06	Riedel Gerd	A04.08
Putzolu Cristiano	A07.05-P-1, A22.04, A40.02-P-2	Riedhammer Karin	A44.06
Pyzel Joanna	E01.12	Riel-Salvatore Julien	A12.02
Pyżewicz Katarzyna	A24.09, A25.03-P-1	Riera Mateu	A33.07
Querel Carole	E06.02-P-1	Riquier Vincent	A42.04, B11.03
Quinn Colin	A23.09	Risan Thomas	B06.03
Raczky Pál	A46.08	Risbøl Ole	A05.07, B02.03
Radini Anita	E06.07	Risch Roberto	G02.02
Radu Valentin	G02.13	Rissanen Hannele	F03.11
Rafel Nuria	F08.04-P-1	Rivals Florent	E01.01
Rahempour Patricia	C03.02-P-1	Rivollat Maite	F04.05
Raike Eeva	D04.04-P-1	Robak Zbigniew	A16.12, A41.01-P-3
Rajic Sikanjic Petra	A09.03-P-1, A39.13	Robb John	A19.02, A39.01
Rak Michal	A10.02-P-3, B10.10	Roberts Jonathan	B13.05
Ramsl Peter.C	A14.06	Robin Guillaume	E02.04
Ramsthaler Frank	F03.12	Robinson Erick	F07.08
Rannamäe Eve	G01.09-P-1	Rodrigues Nuno	B13.01
Rapan Papesa Anita	A09.03-P-1	Rogers Alice	A05.03
		Rojo Guerra Manuel A.	F03.01
		Rolfo Mario Federico	A23.16, E02.05

Rollet Philippe	E06.10	Saña Maria	A07.05, E01.14, E04.04
Romanogli Francesca	A24.04, A27.06	Sánchez-Hernández Carlos	E01.01
Roman Monroig Didac	F08.05-P-1	Sandes Caroline A.	B03.02, B09.05
Romanescu Gheorghe	E05.11	Sandner Ruth	A04.08
Romanowicz Paulina	A09.04-P-1	Sandu Ion	E05.11
Rönn Magnus	B06.01-P-2, B06.05	Saner Turgut	C03.03-P-1
Rösch Manfred	E06.05	Sankot Pavel	A14.02
Rosell Antoni	E01.14	Santana German	A21.07
Rosenstock Eva	E01.10	Santaniello Fabio	A25.03
Ross Shawn	F02.01, F02.06	Santos Hélder	B01.01, B01.09
Rostock Jette	B14.05	Sastre Magdalena	A33.07
Roth Christina	F03.01, F03.02	Sayej Ghattas	D04.08-P-1
Rott Andreas	F03.09	Sayer Duncan	A09.06
Rottier Stéphane	A09.17, A18.03, A22.01-P-2, A40.03, F04.05	Scarre Chris	A03.08, A46.10
Roustaeeyanfard Ali	A19.08	Schadla-Hall Tim	D04.07
Rovira Carme	F08.04-P-1	Schäfer Kathrin	A09.05-P-1
Rovira Hortalà Carme	F05.03	Schallin Ann-Louise	C03.04-P-1
Roxana-Gabriela Curca	A33.09	Scharl Silvine	A44.11
Roy Victor	C05.09	Scheeres Mirjam	F03.13
Roymans Nico	F02.08	Scheibner Alisa	E01.10, E04.06
Rucci Arturo	D02.08	Schejbalová Zdenka	A10.12
Ruiz del Árbol Moro Maria	E05.10	Schenck Tine	B07.05
Rundberget Bernt	F05.10	Schepp Ulrike J.	D01.04
Runge Mads	A38.09	Scherzler Diane	D03.03
Russell Ian Alden	D02.01	Scheu Amelie	F02.03
Rustoiu Aurel	A14.09	Schier Wolfram	A32.08
Rytíř Ladislav	A34.04-P-1	Schimmelpennig Dirk	A13.16
Sacilotto Charlotte	A46.15	Schlenker Björn	F03.12
Sadig Ali Azhari	A06.18	Schmid Magdalena	F07.06-P-1
Saile Thomas	A37.03	Schneider Nathalie	A42.03
Saipio Jarkko	C02.08	Schneidhofer Petra	A20.01
Sakellariadi Anastasia	C08.01-P-4	Schneikert François	A42.03
Salanova Laure	A46.03	Schofield John	A10.01-P-3, A10.11
Salari Leonardo	E02.05	Schönfelder Martin	F03.13
Salas Magdalena	A33.07	Schorer Birgit	A28.05
Salesse Kevin	A39.09	Schroeder Hannes	F03.03
Saliari Konstantina	E02.08	Schulting Rick	A11.11, F07.06
Salisbury Roderick	F02.02	Schwab Roland	A28.05
Salmi Anna-Kaisa	E06.13	Schwarzberg Heiner	A06.02
Salque Mélanie	E01.12	Scopigno Roberto	G02.23
Salvadei Loretana	A09.02-P-1, A13.01-P-1	Scott-Cummings Linda	E01.15, E06.06
Salzani Luciano	A01.14	Sebastian Lynne	B14.02
		Sebire Heather	A29.05, B06.10

Sebők Katalin	A46.14	Sobkowiak-Tabaka Iwona	E01.12, F08.06-P-1
Sedláčková Hedvika	E03.03	Sobotkova Adela	F02.01, F02.06, F02.09, F02.10
Seetah Krish	A21.01-P-3, A21.03, E02.01	Sofaer Joanna	C01.08
Segain Ellebore	G02.10	Solcan Loredana Ștefania	A13.12-P-1
Seitsonen Oula	B05.04	Solheim Steinar	F07.05-P-1
Sellier Pascal	A09.10, A39.09	Solovyeva Elena	A06.10
Semprebon Gina	E01.01	Soriano Ignacio	F08.04-P-1
Senn Marianne	F05.07	Soroa Aitor	B13.14
Senos Matias Manuel	B01.01, B01.09	Sorodoc Nicolaie	C04.06
Serlegi Gábor	A37.05, F09.02, G02.09	Sorotou Aphrodite	B06.09
Serrano María Libertad	D03.09	Sóskuti Kornel	A09.12
Sevara Christopher	B13.04	Sosna Daniel	A13.15, A17.01
Sevillano Perea Luis	A15.04	Soubrier Julien	F04.03
Shamanaev Andrey	C03.05-P-1	Souquet-Leroy Isabelle	A39.11, C02.13
Sharapov Denis	C05.05	Spataro Michela	A32.02
Sharapova Svetlana	A20.05	Spatzier André	A13.15, A19.04
Shay Talia	D04.06	Spichtig Norbert	F03.11
Shcherbakov Nikolai	C05.01-P-4	Spring Markus	A07.04
Shearer Ingrid	B06.07	Sraka Marko	A32.09
Shennan Stephen	F07.02	Stanc Margareta Simina	A21.02-P-3, F01.01-P-3
Shepard Ben A.	A11.09	Stanev Kamen	B06.08
Shishlina Natalia	F03.10	Starkova Lenka	B10.10
Shuteleva Iia	C05.01-P-4, G02.11-P-1	Stäuble Harald	A44.09
Shvedchikova Tatiana	A39.04	Stecher Marcus	F03.12
Siebel Wolfgang	F03.13	Stefan Livia	D02.01-P-3
Siegmund Frank	D03.04	Stefanovic Sofija	F07.09
Siemen Palle	A01.01	Stegmaier Gerd	A31.03
Siklósi Zsuzsanna	A32.10	Stella Giuseppe	B01.01, B01.08
Sikora Przemysław	A16.10	Stevenson Mark	B13.14
Silvestri Letizia	A23.16, E02.05	Stewart John	F03.05
Simpson Faye	D03.07, D04.02	Stöger Johanna (Hanna)	A07.07
Sintes Elena	A07.05	Stojanovski Darko	A32.01
Siotto Eliana	G02.23	Stolyarova Ekaterina	E03.02-P-3
Skoglund Peter	A38.10	Stopp Barbara	F03.11
Skrupskelis Algirdas	B02.03-P-1	Storli Renate	G02.11
Slaviček Karel	G01.18	Strien Hans-Christoph	A36.08
Sloan Kate	D02.06	Strobel Michael	B12.05
Ślusarska Katarzyna	A06.14, A38.02-P-3	Stróżyk Mateusz	B02.10
Smith Kevin	A43.01	Sturdy Colls Caroline	B05.02, B10.11
Smith Scott	A35.06	Styring Amy	E01.03
Smolska Ewa	F06.01, F06.04-P-2	Suciu Cosmin Ioan	A32.01-P-4
Smyth Jessica	E02.03, F07.10	Suhrbier Stefan	A44.05
Sne Andris	B07.09, C09.05	Sümeği Pál	F02.01-P-3, F02.02

Suncovas Vaidotas	B02.03-P-1, B10.03-P-3, E01.16	Templer Michael	A45.07
Surmely Frederic	A15.09, A26.07	Templeton Jennifer	F04.03
Svensson Eva	G02.13-P-1	Tencariu Felix	E05.11
Svoboda Jiri A.	A26.08	Terävä Elina	E03.05
Svyatko Svetlana	E01.02	Terekhova Nataliya	G01.12-P-1
Swedberg Stig	B06.01-P-2, B06.05	Terradas Xavier	A25.02-P-1, E01.14
Swieder Anna	B02.01-P-1	Těsnohlídek Jakub	G01.18
Sylvie Boulud-Gazo	A13.10-P-1	Thér Richard	A31.06
Symonds James	A04.01, A10.12	Thevenet Corinne	A36.12
Syvolap Mykhaylo P.	A03.02-P-2	Thienpont Hugo	A13.14-P-1
Szabó Dénes	A13.13-P-1	Thiol Sandrine	A09.17, A40.03
Szalontai Csaba	A23.18	Thomas Ben	D04.05-P-1, G02.06
Szécsényi-Nagy Anna	F01.03, F01.07, F03.02	Thomas Mark	F07.02
Szende Katalin	F09.05	Thomas Roger M	A15.06
Szeverényi Vajk	A23.01, A23.18	Thomas Roswitha	A27.01-P-2
Szilágyi Magdolna	F09.02	Thomas Yohann	A42.03, E01.04-P-4
Szilágyi Márton	A32.10, A46.14	Thomashausen Laurent	B11.03
Szmyt Marzena	E01.12	Thun Hohenstein Ursula	A01.14, E02.04-P-1
Sztabała Jerzy	A21.01-P-3	Thurzo Dušan	F07.03-P-1
Szwagrzyk Krzysztof	B05.09	Tiddeman Bernard	B13.05
Szwarczewski Piotr	F06.01, F06.04-P-2, F06.07	Tillier Anne-Marie	A09.17, F04.05
Szymanowicz Marcin	F02.02-P-3	Timmer Robert	B02.04
Šabatová Klára	A23.19, B02.02-P-1	Timpson Adrian	F07.02
Šámal Zdeněk	A04.03	Tiplic Ioan Marian	A16.14, B01.06
Šída Petr	A26.01, A44.06-P-2, A44.10	Tiplic Maria Emilia	B01.06
Šlaus Mario	A39.12	Tirloni Ilaria	C02.02-P-3
Šošić Klindžić Rajna	A12.01, B01.04	Tischendorf Thomas	A44.09
Špoljar Davor	G01.06	Titz Pavel	A39.03, G02.17
Štefan Ivo	A16.01-P-3, A16.06, A41.02-P-3, G02.04-P-1	Tixier Jacques	A25.06
Šteffl Jindřich	G01.11-P-1	Tkachuk Taras	A37.01, A37.02
Švejcar Ondřej	A34.01	Tkalčec Tatjana	E02.05-P-1
Tabarev Andrei	A11.04	Tomanova Pavla	A41.03-P-3
Tamulynas Linas	B02.03-P-1, B10.03-P-3	Tomášek Martin	A30.16
Taniguchi Yasuhiro	A11.02	Tonner Philip	C07.05
Tankosic Zarko	G02.11	Torcič Ion	A35.02-P-2
Tarasov Alexey	A25.07-P-1, A25.08	Tornero Carlos	A07.05
Tarcsay Kinga	E03.03	Török Béla	A22.09
Tarrús Josep	E01.14	Tóth Mária	G02.01-P-1
Tasca Giovanni	A22.04, A40.02-P-2	Tóth Peter	A23.12
Tatbul Mustafa Nuri	A17.09	Toufexis Giorgos	A46.03
Tejedor Rodriguez Cristina	F03.01	Tourtellotte Perry	A05.05-P-1
		Trampota František	A44.04
		Trbojević Vukičević Tajana	A02.06, E02.03-P-1, E02.05-P-1

Trefný Martin	A22.05	Vanmoerkerke Jan	A42.04
Trenti Francesco	A27.06	Vanmontfort Bart	A27.01
Tresset Anne	F02.03	Vaquero Manuel	A24.04
Treuilhot Julien	A02.03, G01.02	Varalli Alessandra	E01.06
Tricomi Anna Rosa	A31.02-P-2	Varul Liivi	G01.09-P-1
Tripković Ana	A13.09	Varum Humberto	B01.01, B01.09
Troja Sebastiano Olindo	B01.08	Vařeka Pavel	A04.01, A04.06, A10.12
Trzeciacki Maciej	A16.16	Vasenina Marina	A34.03-P-1
Tsigarida Isabella	E05.09	Vasilyeva Irina	A46.06-P-1
Tsigvintseva Tatiana	A25.04-P-1	Vasilyeva Natalia	B08.01-P-4
Tsydenova Natalia	A11.06	Vavák Július	F07.01-P-1
Tudhope Doug	B13.12	Veber Cécile	A42.03
Turcanu Senica	A06.02-P-3	Vega Susana	D03.06
Turek Jan	A09.06-P-1, C01.09, C04.02	Vegem Vilde	A17.08, B06.11, D02.03-P-3, D02.04, G02.12-P-1
Tykot Robert	E06.08, F08.07-P-1	Végh András	F09.05
Tys Dries	A16.09, C02.14	Veldi Martti	B10.04
Ughetto-Monfrin Joël	E01.03-P-4	Velemínský Petr	A39.09, E01.08
Umbelino Cláudia	A34.02-P-1	Venclová Natalie	A14.01
Uomini Natalie	A24.03	Ventresca Miller Alicia	C05.07
Uotila Kari	D04.04-P-1	Vepřeková Jana	E03.04
Ursulescu Nicolae	A37.06	Vérati Chrystèle	A46.06
Urtans Juris	A21.04	Verdun Ester	E04.04
Vaccaro Carmela	A01.14	Verhegge Jeroen	F07.08
Vachon Véronique	G02.10	Verkooijen Kate	A01.06
Vaicekauskas Ignas	B02.03-P-1	Verpoorte Alexander	A26.13
Valcárcel Rojas Roberto	A21.08	Vescan Iuliu	B13.07
Valeanu Madalin-Cornel	A37.06	Veselsky Pavel	B10.08
Valente Vincenzo	A07.01-P-1	Vésteinsson Orri	A08.05, C04.07
Valeriu Cavruc	E05.07	Vianello Andrea	A35.13, B13.10
Valk Heiki	A21.02	Vicenzutto David	A22.04, A40.02-P-2
van Balen Ronald	A27.03, F02.04	Vidal Ferrus Xavier	A33.11
van den Biggelaar Don	A27.03, F02.04	Viestad Vibeke Maria	A18.10
van den Dries Monique	B04.05, D04.09-P-1	Vieugue Julien	A46.03
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Van Gils Marijn	A27.01	Vilkama Rosa	E01.05, E06.13
van Kruining Marlies	A27.06	Villalobos García Rodrigo	A05.03-P-1
Van Leusen Martijn	A15.01, A27.06	Vinci Giacomo	A05.08
van Oosten Roos	A17.05, C09.01	Vinogradov Nikolai B.	C05.12
Van Strydonck Mark	F07.08	Vlach Marek	A30.10
van Wijk Ivo	A36.05	Vlačíky Martin	A02.02
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von Holstein Isabella	F03.04	Williams Howard	A08.04, A29.03
von Nicolai Caroline	A07.03	Willumsen Yvonne	A39.10
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Vorenhout Michel	B02.04	Winser Keith	B05.01-P-3
Vorotinskaya Larissa	A14.01-P-3	Wiśniewski Andrzej	A24.02
Voskresenskaya Ekaterina	A26.01-P-4	Włodarczak Piotr	A25.03-P-1
Voss Hans-Ulrich	A30.05	Wojenka Michal	A16.11, A43.05
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Vukosavljević Nikola	A12.01	Wolfram Sabine	A44.04-P-2
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Vybornov Aleksander	A25.08-P-1, A46.06-P-1	Wood Jacqui	E06.12
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Vyncke Kim	A20.03	Wright Carrie	E01.09
Vyroubal Vlasta	A09.09	Wright Holly	B13.12
Waelkens Marc	A20.03	Wyczółkowski Mariusz	F06.04-P-2
Wait Gerry	A21.10, B14.06	Yalman E. Nurcan	A46.04
Walsh Kevin	A15.05	Yatsenko Sergey	A03.16
Walter Sebastian	D02.03	Ylimaunu Timo	E03.07
Walton Rogers P.	F03.04	Yost Chad	E06.06
Wattez Julia	A42.02	Younger Rebecca	D02.09
Weber Andrzej	A11.01, A11.11	Zabilska Mirosława	A21.06
Weiss-Krejci Estella	A29.10, D02.10	Zaitseva Ganna	E01.02-P-4
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Wendy Morrison	A15.06	Zaretskaya Nataliya	F06.03-P-2
Weski Timm	C02.15	Zäuner Steve	A28.01
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Wicker Nancy L.	A35.18	Zupanek Bernarda	A33.03
Wigg-Wolf David	A30.01	Zviřecí Petra	G01.14
Wilczyński Jarosław	A02.01, A26.03, A26.08, A36.07	Zweifel Ursina	A09.13
Willett Patrick T.	A06.01	Zyryanova Svetlana	A25.10
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